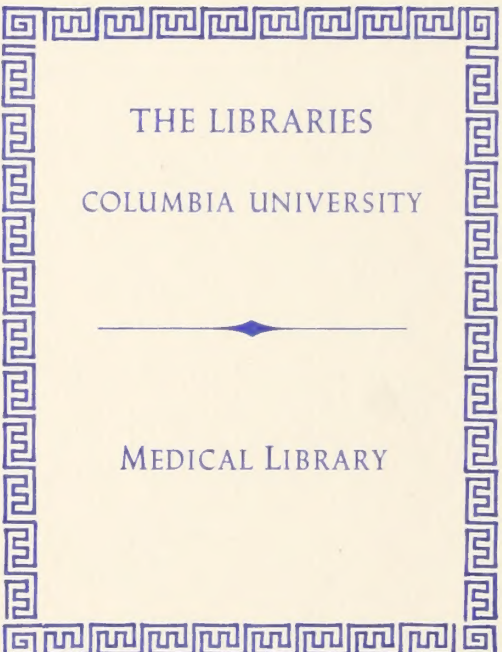


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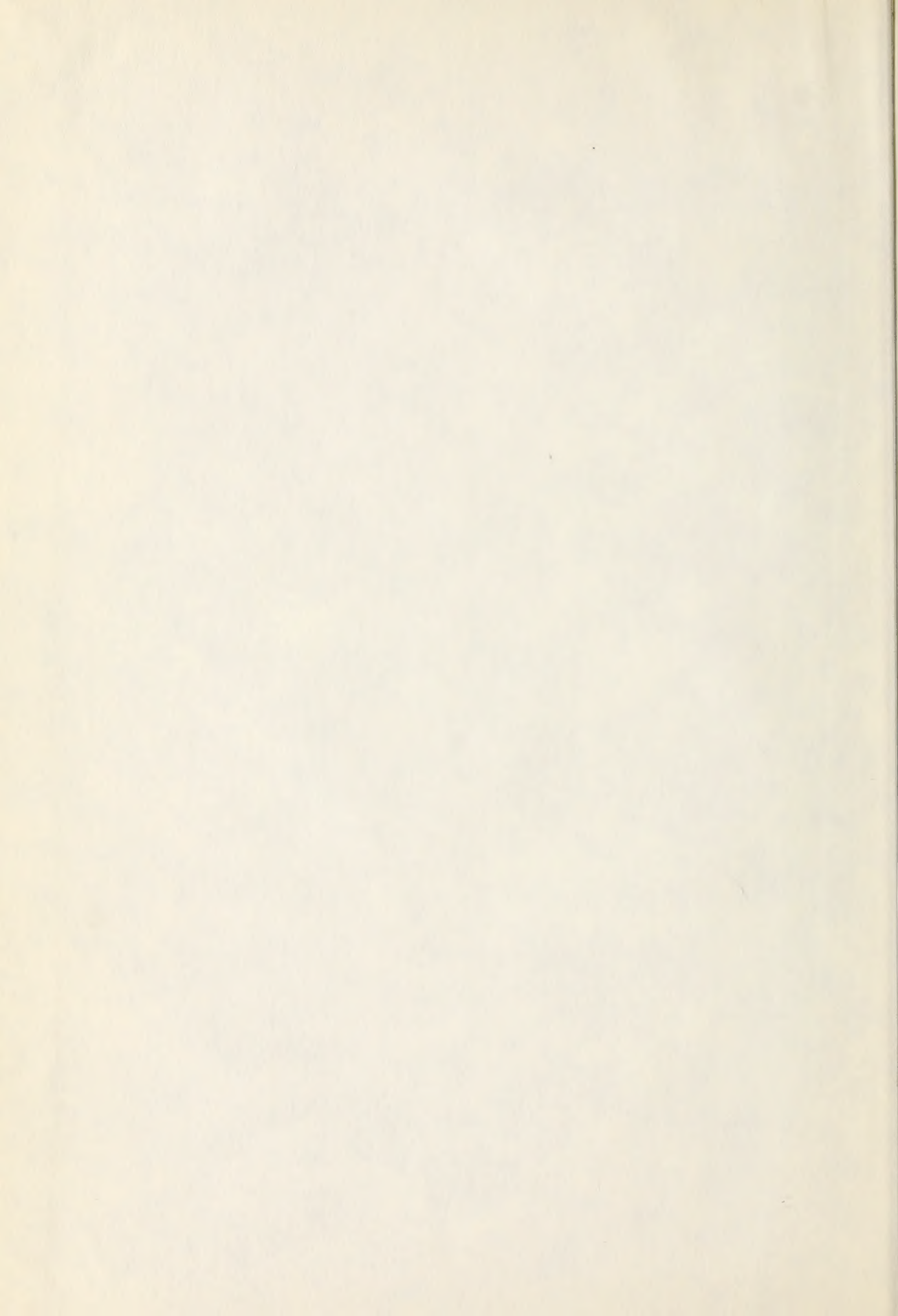


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THE
NEW YORK
MEDICAL JOURNAL.

A
WEEKLY REVIEW OF MEDICINE.

EDITED BY
FRANK P. FOSTER, M.D.

VOLUME XLVIII.
JULY TO DECEMBER, 1888, INCLUSIVE.



NEW YORK:
D. APPLETON AND COMPANY,
1, 3, AND 5 BOND STREET.
1888.

NEW YORK

MEDICAL JOURNAL

WEEKLY REVIEW OF MEDICINE

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CHARLES F. WINTER, PUBLISHER.

FOR THE YEAR

1888 TO 1889



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Original Communications.

ARTHROPATHIA TABIDORUM.*

By PARKER SYMS, M. D.

ARTHROPATHIA TABIDORUM, or Charcot's joint disease, is an affection of the joints found in a small number of tabetics, occurring almost invariably in the initial stage, seemingly dependent on trophic disturbance. It is not of an inflammatory nature. It is characterized by a sudden and painless onset, by a marked swelling of the entire limb, which quickly subsides except around the joint, and finally by very rapid and complete changes in the bony and soft structures of the joint, producing remarkable deformity. In some cases there may have been no general swelling, and a spontaneous fracture of some portion of the bone may be the first indication of the disease; or an enlarged and deformed joint may be casually found to exist.

I shall not attempt to give an historical account of the literature and elucidation of this very interesting disease. To Charcot, of Paris, belongs the credit of having first called attention to the condition and to its relation to tabes. Many others have contributed papers on the subject and reports of cases. The most noteworthy discussion of the disease was that which took place in the London Clinical Society in 1883.

The disease is so rare, and so few opportunities have been given to one man for its study, that great diversity of opinion exists on many points in connection with it. This is most strikingly brought out when we come to the question of its cause and of its connection with locomotor ataxia. The proportion of tabetic subjects having this form of joint disease is unknown. Both sides of the body are affected with equal frequency. It often affects many joints. In 109 cases collected by Weizsäcker, 169 joints were diseased. The large joints are chiefly involved. The disease occurs in the joints of the lower extremity much more frequently than in those of the upper, in the proportion of nearly four to one.

Weizsäcker's collection of cases is a very good one, and may be used as a basis for statistics. The 169 joints were as follows: Knee, 82 (2 were doubtful); hip, 31; shoulder, 21; tarsus, 13; elbow, 10; ankle, 9; carpus, 4; spine, 1; joints of lower extremity, 133; joints of upper extremity, 35.

Syphilis has been observed by different men in such extremely varying proportion of cases that some attach very little importance to it, while others think we may come to regard it as the cause of tabes.

The structural changes in this disease are very marked. They involve both the bone and the soft parts. The synovial membrane is usually pale, though sometimes congested. The capsule is thickened by connective-tissue increase, and there is often a very marked hyperplasia of the surrounding tissue, forming a large part of the deformity. The entire capsule may be replaced by a connective-tissue mass.

* Read before the Society of the Alumni of Bellevue Hospital, February 1, 1888.

There is always an effusion into the cavity of the joint and into the deep fasciæ. It consists of pure serum and lacks the characteristics of inflammatory exudation. The ligaments are stretched and the cavity of the joint is over-ample, as after a chronic hydrarthrosis. Ossification occurs in the tendons, ligaments, capsule, or on the articular surfaces. These bony masses also occur as free joint bodies.

The changes in the bones may be divided into two sets of cases, the hypertrophic and the atrophic; a combination of the two processes is common. In the atrophic form the epiphyses are more or less absorbed. The entire articular surface may be changed into a rounded extremity like a drum-stick, retaining some of its natural coverings. In this class of cases the disability is great, owing to the instability of the joint from want of surface.

In the hypertrophic form there is great increase in the size of the bone ends, depending on large outgrowths of bone on the epiphyses. These masses, as stated above, occur also in the soft parts, and are often to be found on the shaft. In this form the deformity is always great, but the function of the joint is usually better than in the atrophic cases. Spontaneous fractures are of common occurrence. They involve sometimes the shaft of the bone, sometimes the bony processes. Fractures of the shaft unite with a very good callus.

The microscopic changes, according to Blanchard, are those found in osteitis rareficans. The lamellæ are broken down or absorbed, so that several canaliculi are converted into a large canal. The bone plates are thinned, and the canals are filled with fat. According to Regnard, these bones are changed chemically, as in osteomalacia, the phosphates being decreased to 11 per cent. and the fat increased to 37 per cent.

The symptoms are well marked. The indications of tabes can not be many nor prominent early, as the joint disease begins in the initial stage. The constant symptom of tabes present is analgesia, especially of the deep parts. Usually the patellar reflex is wanting, and we can add the Argyll-Robertson pupil, and more or less inability to stand or walk without the aid of sight. The various deformities of the joint which may be found need not be described.

The sudden onset, the lack of pain, and the rapid destruction of the joint are diagnostic. They certainly distinguish it from arthritis deformans, the one disease with which it is likely to be confounded. Arthritis deformans is much slower in its progress, is always the cause of pain, and some motions of the joint are always restricted, while in Charcot's disease the joint is usually abnormally movable in every direction. Of course the nervous symptoms must help the diagnosis. The patient's disability is usually very great, though in all but one of the cases I have seen they have been able to walk with a cane.

I shall now mention some of the theories as to the origin of this disease. It has been maintained:

1. That it is purely a mechanical condition caused by the abnormal gait of the patient, due to locomotor ataxia.
2. That it is due to a direct trophic disturbance of central origin—a certain point being involved for a correspond-

ing joint; or that there is one center responsible for the nutrition of joints. (Buzzard suggests that this hypothetical point is in the medulla.)

3. That it is not a peculiar disease, but is (a) arthritis deformans coincident with the tabes, or (b) a purely syphilitic joint in the same connection.

4. That the serous effusion is due to trophic disturbance, and that the changes in the bone are due entirely to the pressure of the effusion and the consequent anæmia of the periosteum. (Macnamara.)

5. That it is due entirely to a traumatism and that the primary changes are inflammatory, but, owing to analgesia, the joint is not kept at rest and progress is different, merely on that account, from ordinary traumatic arthritis.

6. That it is due to a direct trophic disturbance, like *ulcus perforans*, not of central origin, but due to atrophy of the peripheral nerves. (Weizsäcker.) I understand this to mean that only the nerves of the diseased joint were atrophied, and therefore this joint became involved.

7. That it is due to traumatism or some change in the condition of the joint to be affected. The progress attained depends on the fact that the nerves of all large joints are degenerated, and some degeneration occurs in the structures of apparently healthy joints in tabetics, as pointed out by Jurgens and Westphal.

I am inclined to the last theory. The fact that the nerves and structures of seemingly healthy joints are in a state of partial degeneration has been demonstrated, and it only remains to assign a reason why a certain joint should continue in the process. I think it is reasonable to look for this in some local condition, such as a traumatism. If it were simply a continuation of the degenerative process, other joints would be involved in time. But a patient may have a single joint affected for years.

The idea that it is dependent on the peculiar gait is not tenable, for the disease occurs before inco-ordination is present, and patients have developed it while lying in bed; also because it occurs in the upper extremity.

Neurologists have not found for us the central point alleged by Buzzard and Charcot, and changes in the peripheral nerves seem to explain the disease more satisfactorily. Charcot's disease differs in its pathology and symptoms from arthritis deformans and syphilitic joints sufficiently to give it an identity as a peculiar condition.

The idea that it is caused by the serous effusion, as suggested by Macnamara, it seems to me does not need contradiction.

I do not think I can agree with Dr. Starr in considering it of a purely traumatic nature. The changes are none of them of an inflammatory nature, and certainly must be regarded as due to nerve changes.

The treatment of the joint must necessarily be limited. The swelling tends to subside. This may be aided by pressure, massage, and external irritation. If the locomotion is very seriously interfered with by the instability of the joint, a splint should be applied, or in such a case, if the patient's general health is fair and there is no inco-ordination present, I believe excision of the joint is a justifiable proceeding. Spontaneous fractures unite well, and there is no

reason why we should not get good union after operating. The patient whom I present to you to-night gives the following history:

Henry B., aged fifty-six years, a sea-cook by occupation. He denies all symptoms of syphilis. He has had gonorrhœa several times, but not since 1874. He has no gleet. When six years of age he received a kick from a horse, probably fracturing the right parietal bone, in front of its superior posterior angle. He says he was unconscious for six days; that he bled a good deal; he does not know if from the nose or ear.

He states that there was no paralysis of speech or motion. Since the accident he has been deaf in the right ear. His subsequent history till within the last four years is rather negative. About twenty years ago he suddenly lost the power of seeing in the evening or in a dim light. This lasted about six months and then improved. Since then he has been in good health till about four years ago. At that time, two days after taking a bath and exposing himself, there suddenly developed what he calls a weakness in his legs. He says that his gait was unsteady, and that he was thought to be intoxicated. At that time he had no sense of numbness in his feet. During the next six months he regained the power of walking, but lost to quite a degree the sensation. He says he feels as though he were walking on an uneven surface of soft, spongy material. He has a feeling of numbness in his legs and feet. His symptoms have always been more marked in the left than in the right side. He has had some darting pains. Cold to the surface gives an exaggerated sensation. There was very little change in his condition till eight months ago, and he was able to do some work till then. At that time the knee swelled to more than its present size within one week. He thinks it reached about its present condition of deformity and mobility in less than one month. By that time there was considerable lateral mobility of the joint. Three months later the thigh and leg became very much swollen, and the knee at that time was very large. This general swelling gradually subsided.

I first saw him shortly after this. There was a swelling of the entire limb of a hard and peculiar character. There was a very large mass below the middle of the thigh. It was imperfectly movable and seemed to have a deep origin. It has since become very much reduced in size and ossified on the shaft of the femur.

Examination at present, five months after the general swelling of the limb: He has anæsthesia, deep and superficial, of the limbs, especially of the left one. Sensation does not seem to be delayed. Patellar reflex is absent. He sways when standing with closed eyes. His walking is better, proportionately, than his standing, when his eyes are shut. His pupils are fairly dilated. They respond for accommodation, but act only fairly to light. They are about equal in size. They are not dilated well by cocaine. There is partial atrophy of the right optic nerve on the temporal side. There is catarrhal deafness on the left side and complete nervous loss on the right side. I am indebted to my friend, Dr. Asabel Barker, for the examination of the eyes and ears.

The left limb is very much deformed. The knee measures four inches more in circumference than the right. There is some increase in the whole limb. There is some fluid in the joint cavity. On motion, there is a very marked crepitus. Lateral mobility is greatly increased. The general contour of the joint is lost, owing to thickening of the capsule and marked hypertrophy of the bony processes. The internal condyle of the femur is particularly enlarged. There is a well-marked spine of bone on the inner side of the lower end of the shaft of the femur, probably four inches in length.

ANEURYSM OF THE INTERNAL PUDIC ARTERY.*

By FRANCIS W. MURRAY, M. D.,
VISITING SURGEON TO ST. LUKE'S HOSPITAL.

WHILE the occurrence of aneurysm in the gluteal region may be said to be infrequent as compared with its occurrence in other regions of the body, still it is not rare. In a hasty and incomplete examination of the literature on the subject, I have found the records of forty-nine cases, and, if a careful search were made, many more instances would, without doubt, be added to this number. Of these forty-nine cases, forty-seven concern the gluteal and sciatic arteries, the former being affected much more frequently than the latter, and the two remaining cases are examples of aneurysm of the internal pudic. One is a pathological specimen, and the other is an interesting case, reported by Dr. Gibney in the "Medical Record" for August 27, 1887. The pathological specimen is a preparation in the museum of the College of Surgeons in London, and it exhibits an aneurysm of the trunk of the pudic an inch in diameter and full of fibrinated laminae, the aneurysm being situated outside of the pelvis. Gibney reports a case of aneurysm of the gluteal region following a blow with the fist over the right hip of a boy of fifteen, who, for a week previous to the injury, had been walking stiffly, favoring the right hip. When seen, seventeen days later, there was a large tumor extending from the crest of the ilium to the middle third of the thigh; there was no pulsation or bruit. The tumor increased in size on the outer side of the thigh, and about its middle a small circumscribed tumor appeared; at this point there was distinct fluctuation. An aspirating-needle was introduced at this point, and it was found that the tumor was filled with blood. A few days later an incision was made into the tumor, the clots turned out, and the ends of the ruptured vessel secured with clamps. Death occurred eight hours after the operation, from secondary shock due to heart failure, the boy being afflicted with a congenital heart lesion. This was unquestionably an aneurysm of the gluteal region, but the evidence is not conclusive enough to allow it to be placed on record as dependent on rupture of the internal pudic artery. No mention is made of an autopsy to prove the correctness of the diagnosis, and it is hardly possible that the force of a blow with the fist over the hip would rupture the internal pudic, as the artery is too deeply situated and too well protected by a thick layer of muscle and connective tissue. It is most probable that the sciatic artery, being driven against the neck of the femur, was ruptured, and was thus the source of the traumatic aneurysm. On account of the rarity of this special form of aneurysm, I desire to report an instructive and interesting case which came under my care last autumn at St. Luke's Hospital.

C. R., sixty-two years of age, journalist, was admitted, September 7, 1887, to St. Luke's Hospital. Eleven days previous to admission, while going down a flight of stone steps, he slipped and fell a distance of nine feet, striking on the left but-

tock, and then, falling backward, struck his head against the steps, receiving a lacerated scalp wound. After remaining unconscious about fifteen minutes he recovered sufficiently to proceed to his office, and then went home. That evening the buttock was swollen and painful, and during the night he suffered from a severe paroxysm of pain running down the back of the thigh. His history for the following ten days is incomplete beyond the fact that the buttock steadily enlarged and grew more painful, and there were several attacks of exquisite pain along the course of the sciatic nerve. In the summer of 1886 and in the spring of 1887 he was under treatment in St. Luke's Hospital for chronic diffuse nephritis, chronic bronchitis, and emphysema. He has had articular rheumatism, acquired syphilis thirty years ago, and has been a hard drinker for some years. The patient was anæmic, had no appetite, was constipated, and complained of dyspnoea on exertion and pain over the cardiac region.

Examination revealed chronic bronchitis and emphysema, cardiac hypertrophy, and aortic mitral murmurs. Pulse 120, weak and irregular; temperature 100.5° F. Arteries rigid and corded, very marked at the wrist and in the temporal region. The urine was increased in quantity, specific gravity 1.011, contained albumin, granular and hyaline casts, mucus, and pus. The left buttock was of about twice the size of the right one, and the patient had to lie on the right side. The swelling extended from the crest of the ilium to the fold of the buttock, and from the edge of the sacrum outward to the great trochanter. It was firm and hard, and, although quite uniform, was particularly prominent and rather pointed over the middle of the buttock. There was ecchymosis over the entire buttock and extending downward and over the left side of the perinæum. There was great pain on pressure, entire absence of pulsation and fluctuation, no murmur or bruit was detected with the stethoscope, and examination through the abdominal wall and by the rectum was negative. Careful examination on the following day revealed nothing beyond some surface heat; temperature 101.5°, pulse 116. He had during the previous night another attack of pain along the sciatic. On the second day after admission there was found over the prominent part of the tumor a spot of about an inch in diameter where fluctuation was well marked. A hypodermic needle was introduced and a syringe of sanious pus withdrawn. Plunging in a curved bistoury, an incision two inches in length was made, and about three or four ounces of sanious pus and several small blood-clots were discharged. This was immediately followed by the expulsion of large masses of coagulated blood with such force as to lead me to suspect something was amiss. The index finger was inserted through the wound and passed down into a large cavity filled with broken-down blood-clots, and, on pressing down farther, a warm, pulsating jet of blood could be felt playing against the finger. In the mean time a severe arterial hæmorrhage was taking place through the wound, and the patient was seen to be very faint and weak. On account of his rather alarming condition and the absence of assistance necessary in such an emergency, the cavity was firmly packed with iodoform gauze, a firm dressing was applied over the buttock, and stimulants were given hypodermically. The patient began soon to rally, and, there being no signs of hæmorrhage from the wound, all operative procedures were temporarily postponed. A few hours afterward, the general condition having improved and the necessary assistance being at hand, it was decided to cut down and ligate the bleeding vessel. A vertical incision about six inches long was made, passing through skin, subcutaneous tissue, and gluteus maximus muscle, and exposing the cavity now filled with gauze. After removing the gauze and some blood-clots, the cavity was found to extend from the upper edge of the pyriformis muscle down

* Read before the Section in Surgery of the New York Academy of Medicine, March 21, 1888.

to the tuberosity of the ischium, and then for a short distance along the great sciatic nerve. At the bottom of the cavity was an aneurysmal sac about an inch in diameter, pulsating, partially filled with blood-clots, and ruptured almost entirely across. The hæmorrhage was easily controlled by pressure. This sac was situated over the spine of the ischium; from its proximal side the artery could be traced toward the great sacro-sciatic foramen, and from its distal side the vessel could be felt passing back into the pelvis. It was evidently a sacculated aneurysm of the internal pudic where it passes over the ischial spine. After some difficulty the distal and proximal parts of the artery were secured close to the sac, the sac was split open, and the clot was turned out. Owing to the condition of the patient's kidneys, the operation was performed without ether, and by this time, owing to the previous loss of blood and the shock of the operation, his condition was again alarming. A single catgut ligature was thrown around both clamps, traction being exerted in an upward direction at the same time, and the artery tied. The cavity was thoroughly irrigated with a 1-to-1,000 bichloride solution, packed with iodoform gauze, and firm bichloride dressing applied over the buttock. During the following twenty-four hours he was drowsy, pulse 120, temperature 102°. Nourishment was retained with difficulty, and the urine was diminished in quantity. On the third day after the operation he was restless, nervous, complained of headache and dizziness, and at times was delirious. On the fifth day his symptoms were such as to indicate iodoform intoxication, so the dressings were removed and balsam-of-Peru gauze was substituted. The wound was in a satisfactory condition, the cavity reduced in size and covered with healthy granulations. The delirium and other nervous symptoms subsided in a few days, and on September 26th he was much stronger and retained his food. He was discharged in the beginning of November with the wound entirely healed and his general condition greatly improved. On February 1, 1888, he was admitted to the medical side of the hospital for treatment of his pulmonary and renal troubles, and apparently was getting better. On the morning of February 13th he was found dead in his bed.

Autopsy Eight Hours after Death.—The lungs were œdematous and congested. The heart was increased in size, weighing eighteen ounces, the left ventricle was hypertrophied, the valves competent. There was slight atheroma of the aortic and anterior segment of the mitral valve. The kidneys were affected with an advanced stage of chronic diffuse nephritis. In the left buttock there was a scar four inches in length; the buttock was somewhat retracted. Careful dissection was made down to the internal pudic over the spine of the ischium. Here was found a firm, white, fibrous mass, about three quarters of an inch in diameter and firmly adherent to the surrounding tissues. The internal pudic artery could be traced into this mass from above and below. A fine probe introduced into the artery from above failed to pass through the mass into the artery below. The artery was dilated above and somewhat contracted below the mass, and was atheromatous throughout. On cutting open the mass, it was found to be composed of firm fibrous tissue, and no communication could be established between the proximal and distal segments of the artery. No trace of the catgut ligature was found. The gluteal and sciatic arteries were atheromatous.

This was a clear case of spontaneous sacculated aneurysm which had existed for some time and which was ruptured by the force expended on the buttock at the time the patient fell. Blood commenced immediately to extravasate into the surrounding tissues, and the extravasation steadily increased, expanding the parts and filling the space with

soft coagula, until the buttock attained the size presented on examination. As to the situation and form of the aneurysm, the cause is naturally obscure, but I will add that, some ten years ago, the patient fell on a sharp object on the deck of a ship and received a severe lacerated wound of the left side of the perinæum. Possibly the force of the fall at that time might have weakened or caused a slight laceration of some of the coats of the diseased artery, and thus have been the beginning of the trouble. It is hardly probable that it commenced then, as in the time which has since elapsed the aneurysm would have attained a size sufficient to have attracted the patient's attention. The paroxysmal attacks of exquisite pain along the back of the thigh were due to temporary increase in pressure on the sciatic nerve, caused by a valvular action of the clots at the point of rupture in the aneurysmal sac. The diagnosis of aneurysm of the gluteal region is frequently a difficult one, and, according to Barwell, "proportionally to its frequency, more mistakes have been made in cases of this particular aneurysm than of any other." In this case the history of chronic kidney disease, the atheroma of the vessels, and the swelling dating from the time of the injury, led me to suspect that it might be a case of aneurysm. On the other hand, the absence of pulsation and bruit, the increased surface heat, the ecchymosis and œdematous condition of the skin, a temperature of 102°, and finally the discovery of pus with the needle, seemed to justify the diagnosis of abscess. My interpretation of the case was, that there was a large hæmatoma of the buttock not dependent on rupture of any of the large arteries in that region, that suppuration had begun in it, and that it was about to break through the skin. The omission to use a large aspirating-needle at the time of the first examination may be justly criticised, as it would have probably given a clear insight into the case. The surgical treatment, under the circumstances, was, in my opinion, justifiable, and, if the patient had been left to expectant treatment, he would have succumbed to the hæmorrhage which was sure to follow sooner or later. The successful result was due mainly to the careful antiseptic treatment, which was carried out both during and after the operation. Whether the single ligature exerted pressure sufficient to compress the artery without cutting through its coats, thus avoiding secondary hæmorrhage, is uncertain. Had it not been for the alarming condition of the patient, I would have taken more time and tied both ends of the artery after cutting away the sac. Considering the brittle condition of its coats, this procedure might have increased the chances of secondary hæmorrhage, but that is a matter of personal opinion. I desire to express my thanks to Dr. Robert Abbe for his skillful assistance and valuable advice at the time of the operation.

Hæmoglobinuria in Rheumatism.—The "Lancet" says: "If the recorded and unrecorded cases of hæmoglobinuria occurring in apparently genuine rheumatism were all numbered, it would have to be admitted that the sum would be considerable, although the occurrence is usually regarded as exceptional. Recent literature furnishes many examples of rheumatic hæmoglobinuria, frequently in association with erythemata of the skin, which occasionally present purpuric and vesiculate characters, either singly or combined."

A RAPID METHOD FOR THE QUANTITATIVE ESTIMATION OF GLUCOSE IN URINE BY FEHLING'S SOLUTION.

BY WALTER MEDELSON, M. D.,

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My object in writing this short paper is to call the attention of physicians to a method of using Fehling's quantitative determination for glucose in urine, which effects a saving of fully one half the time usually required.

Before getting at the gist of my subject I desire to emphasize a few peculiarities of the behavior of urine to Fehling's solution, as it is upon the occurrence of these peculiarities that the *rationale* of the method I am about to describe is based.

Every one who has critically examined many specimens with Fehling's solution will have noticed two striking facts. The first of these is that some urines from which sugar can by various tests be positively excluded will decolorize the solution, and even give it an orange or opalescent-green tint. The second is that urines known to contain sugar fail to produce a characteristic precipitate with Fehling's test, giving instead appearances identical with those just described, or filling the test-tube with a precipitate usually of a yellowish-green color, which never turns red and never satisfactorily settles to the bottom, and which is, moreover, so fine as to pass through most filters.

The reason for these disturbing variations from the classical action of the test, as described in the books, is to be found in the fact that urine contains normally two classes of bodies, one of which has the power of reducing copper oxide, and the other of redissolving such oxide when from any cause it has been reduced. Here, then, we have two substances of antithetical action, the final result of their presence being according as one or the other preponderates in quantity. The less sugar the specimen contains, the more disturbing these variations become, and it may happen that as much as one half of one per cent. of sugar is present without a characteristic precipitate being formed. Concentrated high-colored urines are, as a rule, more apt to show these peculiarities than dilute, pale urines. Two kinds of error are consequently likely: One that traces of sugar may be overlooked, the other that traces may be reported in urines containing none.

In another paper I propose to show how small quantities of sugar may be detected in spite of these disturbances, confining myself here only to the discussion of the quantitative determination by Fehling's solution.

The non-appearance of the red oxide and its replacement by a greenish-yellow precipitate, which persists in remaining in suspension for an indefinite length of time in the contents of the flask, are common sources of vexation to any one whose time is precious.

To avoid these difficulties, the following procedures should be employed:

First, use a flask capable of containing about 250 c. c., and, after adding the usual 10 c. c. of Fehling's solution, fill half full of water, or till the solution is of a very pale blue.

The reaction takes place much better and can be more closely observed than when the test solution is used in concentrated form. Secondly, the urine should be well diluted. Make a preliminary qualitative test to judge approximately of the quantity of glucose present and dilute accordingly. One in ten is a convenient strength. This, together with the thinning of the Fehling's solution, will insure proper dilution of the normal reducing and dissolving substances of the urine, and minimize their disturbing action.

The temptation to use the urine but slightly diluted or of full strength when the amount of sugar is small, so as to shorten the time necessary in using the burette, is very great, but will always be regretted if yielded to, for it generally ends in being obliged to undertake the whole analysis afresh after wasting considerable time.

Put the diluted Fehling's solution on to boil while preparing the dilution of urine and filling the burette. Then, when all is ready, in starting the process, allow only a small quantity—from one half to one c. c.—to flow from the burette before boiling again, removing the flame and allowing the ebullition to cease each time before adding more. *Boil hard* each time, as this causes the particles of oxide to cohere and fall to the bottom more quickly than otherwise.

Even under the most favorable circumstances—that is, when a red precipitate appears at once and falls quickly to the bottom as the reaction nears completion—a considerable time must always elapse before the supernatant fluid is sufficiently clear to allow the analyst to determine whether all the blue color has been discharged or not, especially as the fine particles of red oxide, when in suspension, give to an otherwise colorless fluid a violet shimmer. This settling may be hastened by adding a dash of cold water to the contents of the flask; but Munk* has devised a method which is probably the greatest improvement in the use of Fehling's solution since the test was first proposed, and which it is the object of this paper to popularize.

This consists in adding a small quantity of a solution of calcium chloride to the mixture in the flask. (Munk recommends three to five drops of a 15-per-cent. solution, but in practice I simply make a pretty strong solution, and use as much as seems needed.) A voluminous, white, curdy precipitate is formed, consisting in part of calcium hydroxide and in part of calcium tartrate, the latter being less soluble in hot than in cold solutions. This precipitate, from its curdy, gelatinous nature, carries down with it the impalpably fine powder of the copper oxide, and quickly leaves a clear supernatant fluid in which the most delicate shade of blue is discernible, if present.

In practice I have found the following the best mode of procedure:

If the oxide comes down red in the beginning, I continue adding from the burette until the rapid falling of the precipitate to the bottom of the flask warns that the reaction is nearly complete. I then add about ten drops—or enough to give a pretty large quantity of precipitate—of the calcium-chloride solution. When the precipitate of

* I. Munk, Virchow's "Archiv," vol. cv (1886), p. 63. I have made an abstract of this article, which may be found in the "American Journal of the Medical Sciences" for October, 1886, p. 543.

copper is yellowish-green and shows no sign of turning red, I add the calcium-chloride solution as soon as I have satisfied myself of the latter fact. Great care must be used to boil slowly at first, allowing the flame of the burner to play gently, with frequent removals, about the bottom of the flask until the whole mass gradually boils. If this is not done, owing to the character of the precipitate, explosive boiling may occur, and the whole contents of the flask be suddenly landed on the ceiling—a monument to precipitancy for all time!

When boiling is once under way there is no more danger of such an accident occurring, and ebullition should be maintained for some minutes before the precipitate is allowed to settle. Should it be found, after the calcium tartrate with the copper oxide have settled to the bottom, that considerable copper still remains in solution to be precipitated, it will generally be necessary to add from time to time, as the urine is run out of the burette, a few drops more of the calcium-chloride solution, as the freshly precipitated calcium tartrate has greater clarifying powers than that which has already been used. Should the amount of precipitate become finally very large, more water should be added to the flask.

By the use of this method a sugar determination may be made in twenty minutes, and several can be done together in even less time each; whereas, under the common method, half an hour would be very short and very exceptional, and an hour or more—depending on the nature of the specimen—nothing unusual.

Two years' constant use, embracing specimens of all varieties of contrariness, warrants me in heartily recommending Munk's method to all who have many, or indeed any, quantitative determinations to make, and to whom time is valuable.

179 WEST SEVENTY-FOURTH STREET.

REPORT OF A CASE OF ENLARGED THYREOID PRODUCING TRACHEAL STENOSIS.

By CUVIER R. MARSHALL, A. M., M. D.,
CLIFTON SPRINGS, N. Y.

ABOUT a year and a half ago there came to the Clifton Springs Sanitarium Mr. J. S., aged sixty-five, with the following brief history: Twelve years before, he noticed some difficulty in breathing, particularly on going up stairs. He never had a cough and never suffered with pain in the chest, or in fact in any other part of the body, and, with the exception of the dyspnoea, considered himself to be a very healthy man.

He had been examined by Dr. Austin Flint, Sr., soon after the discovery of the trouble referred to, and was told that the labored respiration was probably due to an aneurysm, for which large doses of the iodide of potassium were prescribed. This drug was taken for some time without any perceptible effect. Since then he had been examined by various physicians, and as many opinions were advanced as to the nature of the disease.

When he came under my observation he had no subjective symptoms other than the difficulty of breathing. Both inspiration and expiration were loud enough to be heard at a moderate distance from the patient, and after ascending a flight of

stairs the breathing became sufficiently audible to be heard over a large room. Upon physical examination of the chest, nothing was elicited, except that the respiratory murmur on the right side was prolonged and blowing in character, the inspiratory being higher in pitch than the expiratory murmur, while on the left side both respiratory murmurs were normal. There was no dullness on percussion, nor was there any alteration of the normal vocal fremitus or vocal resonance upon either side. The expansive movement of the thorax seemed to be slightly greater on the left than on the right side. There was no upward motion of the larynx synchronous with respiration, a sign found in cases of laryngeal stenosis, and, upon examination with the mirror, nothing of an obstructive character could be seen as far as the second or third ring of the trachea. There was no rise of temperature, and the pulse was normal in rhythm, but not full. The heart was enlarged, and the first sound was weakened, but no murmur could be detected.

A diagnosis of stenosis of the respiratory tract was made, the stenosis being located in the right bronchus, mainly by exclusion; this opinion was apparently strengthened by a subsequent statement made by Dr. Bosworth, of New York.

Mr. S., having expressed a willingness to submit himself to examination by leading men in the profession, was accordingly recommended to visit Dr. Da Costa, of Philadelphia, and Dr. Delafield and Dr. Janeway, of New York. Dr. Janeway sent him to Dr. Bosworth, and the latter affirmed that the trachea was unobstructed, as he could see the bifurcation. The attention of no one had been attracted to the thyreoid gland, as there was no prominence in the neck, which was large, the patient being a very heavy man. Mr. S. returned to his home, and since then has visited Clifton Springs at various intervals, always presenting the same symptoms. His last visit to this place was on the 2d of May, 1888. It was noticed by Dr. Gault and myself that he had become slightly cyanotic, and that the breathing was louder and accompanied with rattling of mucus in the trachea. He reported that he had "taken a cold" which had "settled in his chest."

Upon examination of the chest, the respiratory murmur was observed to be much exaggerated on both sides, and there were loud mucous râles throughout both lungs; the temperature was slightly elevated, and the pulse-rate increased daily, and eventually became very irregular; the breathing grew more labored from day to day. The treatment consisted in the free use of stimulants, with five-grain doses of carbonate of ammonium and a little Dover's powder, administered every hour. No improvement followed, and finally, on the 13th, the patient died. An autopsy was held, with the following result:

Upon opening the chest the pericardium was found to be in a healthy condition, with no adhesions, and the fluid was normal. The heart was very much enlarged; the right auricle and ventricle were considerably dilated and filled with dark clotted blood, as also were the superior and inferior venæ cavæ. The auriculo-ventricular and tricuspid valves were sufficient by the hydrostatic test, and there was no evidence of any pathological lesion. The left ventricle was markedly hypertrophied, and contained colored serum. The aorta was dilated and also contained colored serum, while the coronary veins were distended to the utmost. The mitral valve was entire, but its edges were thickened and roughened. The heart with its appendages weighed a pound and a quarter, avoirdupois; there was a considerable deposit of fat upon the surface of the organ. The lungs were completely œdematous, pitting on pressure; there was no crepitation, but considerable anthracosis. The pleuræ were healthy, with no adhesions, and there was no evidence of tuberculosis. The lungs upon section were dark-brown in color and hyperæmic, and the bronchi contained mucus and serum.

The trachea was firmly compressed between the two lobes of an enormously hypertrophied thyroid gland, which was situated behind the manubrium, extending upward as far as the upper margin of the thyroid cartilage and downward almost to the bifurcation of the trachea. The trachea was flattened laterally,



and the mucous membrane over the area of compression was hyperæmic. The hypertrophied gland weighed a pound and a half, and consisted of two flattened, kidney-shaped lobes of equal size and of very firm consistence. A photograph of the enlarged gland, which accompanies this report, gives a view of the mass from behind. The flattened trachea is held open by means of a stick, which lies across the site of the larynx. The portion of trachea shown contained two distinct curves, and the opposite lateral walls were almost in contact.

LIGATION OF A TONSIL FOR HÆMORRHAGE.

By EDWARD WIGHT CLARKE, M. D.,
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THROUGH the kindness of Dr. T. M. Markoe, attending surgeon, and Dr. William Gordon, house surgeon at the New York Hospital, I report the following case of hæmorrhage after amygdalotomy, with the method employed to check it:

A. M., twenty-two years of age, single, German, nurse, well nourished and robust, was received under Dr. Markoe's care on April 6, 1888, suffering from extensive hypertrophy of both tonsils. On April 11th a portion of both tonsils was removed with a volsella and angular scissors. The immediate hæmorrhage was moderate and soon stopped. About an hour later I was called to the ward, Dr. Gordon not being in the hospital, and found the patient bleeding freely from the left tonsil, a large amount of blood having been lost already. Glycerite of tannin, a mucilaginous emulsion of turpentine, and styptic cotton were used in turn without any appreciable effect. Paquelin's actual cautery was next used. This served to check the oozing and bring into view a small bleeding artery in the

middle of the cut surface of the tonsil. Several applications of the cautery directly to the bleeding point were made, but failed to affect the bleeding. Long clamps, with blades padded with cotton, one blade on the tonsil, the other outside on the cheek, also failed, as they could not be kept long in place on account of pain.

By this time the patient had become very weak and pale, with the pulse rapid, feeble, and soft, and it seemed to me that unless something radical were done immediately he would soon die from loss of blood; so, as he was very restless and nervous, ether was given, a gag introduced, and as much as possible of the bleeding tonsil seized with a volsella having large, bulging double points. The tongue was then drawn out of the way with a second smaller volsella, and a large silk ligature, with a double turn in the first knot, thrown loosely around the forceps on the tonsil. With the index fingers the knot was pushed down over the bulging hooks of the forceps on the tonsil, and thus easily around that portion of the tonsil included in them. When an attempt was made to tighten the ligature it slipped off, not having been well adjusted. A second and successful effort was made, with the difference that an assistant was employed to tighten the ligature while it was held about the tonsil with the index fingers as before. To make it more secure, a second turn about the included tonsil was taken, and a double knot tied on this. The long ends of the silk were carried out of the angle of the mouth and secured to the cheek by rubber plaster. The hæmorrhage was now checked completely. The ligature came away on the fourth day with no recurrence of the hæmorrhage, but a week later, when the patient was discharged to return to his duties, he was still very pale and somewhat weak.

Ligation of a tonsil stump might be done without anæsthesia, but only in special cases where the patient was intelligent and devoid of nervousness. Whether it could be done without assistance I doubt very much, and my success in the foregoing case was, to a considerable extent, due to the efficient assistance of Dr. Merrill, of the house staff of the hospital.

Correspondence.

LETTER FROM PARIS.

Typhoid Fever and Poisoning with Diseased Meat.—The Diseases grouped as Puerperal Fever.—Tale in the Treatment of Phthisical Diarrhæa.—Successive Tappings in the Purulent Pleurisy of Children.

PARIS, June 15, 1888.

PROFESSOR PROUST, who holds the chair of hygiene at the faculty of medicine here, has been giving a series of lectures on epidemics of typhoid fever and other diseases provoked by the ingestion of meat from diseased animals. One of the most important questions raised is that of whether it has been established that typhoid fever is a specific malady, caused by a certain organism called Eberth's bacillus. In Paris this doctrine has for the most part been accepted since the late studies made by Professor Brouardel and Dr. Chantemesse, who showed that this bacillus could be traced to the water-supply. It will be remembered, however, that Murchison held that the typhoid contagium could be developed in any putrid matter, and by this theory it is easy to explain how meat could be infected by the typhoid element; but, if we accept the bacillus as the sole specific cause, and reject the pythogenic theory, which attributes the

generation of the contagium to the fermentation of faecal matters independently of any specific germ, we must prove that these epidemics were caused by meat containing the bacillus first seen by Klebs and then by Eberth, and lately found in the living body by Chantemesse and Widal in Paris. But this is far from proved. Chauveau and Nocard, who are among the most celebrated of French physiologists occupied with the study of animals, state that they do not believe in the existence of typhoid fever in animals. Walder, however, while making an autopsy of a heifer during the epidemic at Kloten, saw that the animal had tumefaction and softening of the mesenteric ganglia and of Peyer's patches, the latter presenting signs of ulceration. A second animal examined presented the same lesions, and both belonged to a farmer who had the fever himself. It was thought, however, that these animals had had access to matters coming from the family who were ill with the fever, and also to matters coming from autopsies made on other animals. In any case, Walder sought to prove that animals could take typhoid fever. The modern progress of bacteriological study will allow us to prove the existence of Eberth's bacillus in man, as well as in animals, in case of an epidemic; but quite recent observations seem to show that different bacilli may produce typhoid states in both man and animals, so that the question is not as yet settled. There have been five well-known epidemics where typhoid symptoms resulted from the ingestion of meat in Switzerland since 1839, when it commenced at Andelfingen, up to Kloten, in 1878, and Würenlos and Spreitenbach in 1880-'81. In the first, some 450 persons were attacked, and over 700 at Kloten. Both of these epidemics followed great dinners given by musical societies, and the meat eaten was veal. The symptoms were those of typhoid fever, with the usual thermometric rise and fall so well described by Wunderlich. The autopsies made showed also the usual signs found after typhoid fever. The matter is important enough to make us insist on the fullest examination of all meat exposed for sale.

It is time that the expression puerperal fever should be shelved. As M. Guérin remarked at a late meeting of the Academy of Medicine, it no longer expresses all the troubles following confinement among those physicians who know how to diagnose such maladies correctly; and, indeed, it has very little sense in modern obstetrical science—no more than pulmonary fever has as expressing the various inflammations of the thoracic organs. If we are to continue to designate septicæmia, metropéritonitis, lymphangitis, uterine phlebitis, perimetric phlegmons, and general peritonitis, as well as purulent and putrid infection, as puerperal fever, we shall not have advanced much in the direction of precision. M. Guérin, after Professor Cornil, defines three states: First, a peritoneal form, giving rise to peritonitis of a general infectious variety with pus; secondly, a pyæmic form, arising from phlebitis or any other cause; and, finally, a form called puerperal septicæmia, caused mostly by retention of all or part of the placenta, which is often curable by antiseptic injections, while the first two forms are generally incurable. In the purulent infection the temperature mounts rapidly and the pulse is rapid, while in putrid infection the fever is slow, something like hectic fever. Distaste for food is also noticed, with abnormal heat and a rapid and compressible pulse, and there is no shivering nor sweating stage. There are, then, three separate orders of accidents in affections coming on after confinement that must be carefully distinguished, and the expression puerperal fever to describe them all should be dropped from obstetrical writing. M. Widal, at a previous session of the Academy, had exposed his ideas on the specific form of microbe that causes infection in puerperal affections, and he comes to the conclusion that it is the same microbe in all the different forms of such troubles, the *Streptococcus pyogenes*. It may cause infec-

tion in lying-in women, just as it does in surgical cases, and, whether it produces suppuration (the pyæmic form), or infiltration of the tissues (the septicæmic form), or false membranes, or, again, clots in the veins (phlebitis), it is always the same form of microbe; and, still more curious to say, the same streptococcus causes erysipelas, or at least it is impossible to see any difference between the micro-organism found in erysipelas and that found in puerperal troubles, with or without the formation of pus. It is possible to produce in rabbits any form of infection with the same microbe, as has been proved by M. Widal in Professor Cornil's laboratory in Paris and by M. Arloing at Lyons, both working independently at the same subject. What effect this new discovery, that the same microbe produces infection both in surgical and in puerperal affections, will have in regard to prevention and cure is yet to be seen, but many of our local scientists can not believe that this agent is introduced either by the respiratory or by the alimentary tract, so that in the case of wounds and in the case of the uterus some local door of entrance must be left open by the surgeon or the accoucheur. It need hardly be added that strict antisepsis is the only practical indication to be drawn from these facts.

Dr. Debove has something new to propose in the treatment of chronic forms of diarrhœa. He says: "I have found the means used for the treatment of diarrhœa to be just as numerous as they are insufficient, and I concluded it would be well to attempt to stuff the intestines with some inert powder that would not be attacked by the intestinal juices." He settled on talc, which is a silicate of magnesium. This was given in doses of from six to eighteen ounces a day. It is finely pulverized and soft, and given in portions of six ounces to a quart of milk, great care being taken to add the old formula, "To be well shaken before taken." The amount of six ounces is usually enough to obtain a complete success in phthisical patients who get diarrhœa. It is interesting to note that many of these patients could not tolerate the milk treatment nor cod-liver oil, as they caused diarrhœa, but that after the administration of talc they got on very well, both with milk and with the oil, some of them taking as much as a pound of oil in twenty-four hours afterward, when they could not stand a moderate dose before without producing diarrhœa. The talc is a very light powder, and is eliminated in twenty-four hours, when the stools will be found quite white. It does not remain stationary in the bowels, but causes constipation, which, however, is not to be feared in such cases as M. Debove used it in, as the diarrhœa was of organic cause and almost certain to return, kept up as it was by intestinal ulcerations. The use of talc was continued for some time in many of the cases, but it has not yet been tried in children nor in diarrhœas of hot climates, such as dysentery, etc.

Dr. Cadet de Gassicourt thinks that it is not necessary to practice an operation in purulent pleurisy in children, but that they can often be cured by successive punctures and withdrawals of a certain quantity of the fluid. The method is most successful in young children, owing to the facts that the thoracic walls are soft and the integrity of the lungs is such that they allow of easy expansion, and that the pleuritic false membranes are not very strong and do not resist this action. The vitality of the pleural sac is such at six to seven years of age that it will absorb with great ease. There should be an interval of four or five days between the punctures, and the temperature must be watched, as it will indicate the reproduction of the pus. The physical signs also are of importance, except that they are not always certain. The time between the punctures must always be the same, as the operator can then judge as to the increase or decrease of the pus. Four or five punctures should be enough, and the quantity taken out each time should diminish.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JULY 7, 1888.

THE COLLEGE OF PHYSICIANS AND SURGEONS.

THIS institution has recently taken several substantial steps in advance, as we see by the "Annual Catalogue and Announcement." Under any circumstances the fact would be creditable to the college, and it is doubly so in the actual state of things, since it shows that the faculty has the courage to assume considerable risk of a loss of fees at the same time that it finds itself subjected to a decided increase of expense in operating and maintaining the new buildings of which it has become possessed by the generosity of the Vanderbilt family. It may be supposed, indeed, that these new possessions have rather imposed upon the faculty the necessity of doing something progressive, for a reputation for wealth leads the public, and in such an instance the medical profession as well, to look upon the individual or the institution so credited as under more than an ordinary obligation in this direction. The position is not always logical, and it may be questioned if the million dollars' worth of property lately acquired by the college has added at all, from a purely financial view, to its ability to stand a reduction of its income from students—and the risk of such a reduction it certainly runs by adding to the requirements that it exacts from its pupils. Nevertheless, we are convinced that the action taken by the college is in the direction dictated by sound business policy, and that any loss it may seem to sustain will be imaginary.

In the first place, whatever it may lose by a reduction in the number of its students will be made good to it in great measure by the receipt of fees for three courses instead of for two. But, better than that, the increased value of its diploma may, we think, safely be counted on, in conjunction with its vastly improved clinical resources, to fill up the ranks of its students in the course of a very short time. In the long run, that medical college is destined to prosper most that sends out its graduates the best fitted to compete for public confidence and favor. Doubtless many a poor boy will yet make his way to a high position in medicine, and, as heretofore, will have to enter the profession by an inexpensive portal. We would not say a word to discourage the lowliest lad who really feels himself fitted for such a career. As a matter of fact, however, the examples of success in such an undertaking are few in comparison with the number of high places to be filled, and it is getting to be understood more thoroughly year by year that satisfactory achievement in professional life, and especially in medicine, is less dependent on natural gifts or lofty aspiration than on the positive and available knowledge that commonly results only from a long and well-ordered educational course, also that such a course is necessarily expensive; consequently

that the difficulties in the poor boy's way are growing greater, and that an adequate mental outfit for a practitioner of medicine calls imperatively for the investment of more and more capital. These facts are obvious to persons of ordinary intelligence, and their bearing can not fail to be felt with increasing keenness year after year. We do not fear, therefore, that the College of Physicians and Surgeons will find in the long run that it has at all jeopardized its material prosperity by incurring the risk of some temporary reduction of its income. However, it is not every faculty that, under like circumstances, would be able to free itself from the timidity of capital, and we congratulate the college on its progressive course.

THE NEW HYPNOTIC: SULPHONAL.

IT is a striking proof of the present interdependence of one science upon another that the chief additions to our materia medica of late years have been due to the great advance in organic chemistry. Not only have new chemical compounds of important medicinal application been discovered, but there has been a steady increase in our knowledge of the relations which exist between the chemical structure of substances and their physical and physiological properties. This has led both to the synthesis of new compounds and to the re-examination of those already known, whenever an analogy of chemical structure has indicated the possibility of a similarity in physiological properties. In this way we have seen added to our materia medica such substances as kairine, antipyrine, acetanilide, thalline, aseptol, naphthaline, acetone, hypnone, urethane, and hydrate of amylene.

It is rather a remarkable circumstance that by far the greater number of these recent additions to our therapeutic resources are employed either as hypnotics or as antipyretics, so that, whereas formerly the physician depended upon quinine as his mainstay for the reduction of fever, and, when he wished to produce sleep, had to ring the changes on opium and the bromides, he now has at his command half a dozen different drugs capable of effecting the former object, and certainly as many more upon which he can rely for attaining the latter end. There has, it is true, been great difference of opinion as to the usefulness of these therapeutic novelties. This is especially the case with regard to the antipyretics—antipyrine, acetanilide, and the like. Some, indeed, go so far as to condemn this class of remedies altogether, alleging that their application is unphilosophical in principle and hurtful in practice. But against the class of hypnotics no such sweeping objection can be brought, and nobody can question the desirability of possessing a safe and generally serviceable agent for producing sleep. Of all the symptoms that attend disease and intensify its misery, few are more distressing to the patient or more annoying to the physician than persistent sleeplessness, and any remedy which can overcome it certainly, comfortably, and without danger is doubtless a great desideratum. It must be confessed that up to this time no such universal remedy has been found. Opium exerts a harmful repressing effect upon the secretions,

and, apart from the danger of immediate ill consequences which sometimes spring from its administration, there is the formidable peril of establishing a habit. Its use is mainly restricted, therefore, to cases where sleep is prevented by intolerable pain. The bromides, which blunt the sensibilities and produce a condition of hebetude favorable to sleep, often fail or exert only a transient action, and hence find their chief application in cases of undue mental excitement or exalted reflex excitability. Chloral hydrate, which has been vaunted as the physiological hypnotic, does, indeed, produce sleep, but it is dangerous in enfeebled conditions of the heart, and is not without disagreeable effects, both immediate and remote. The same may be said of most of the other substances that have since been introduced; each has its drawbacks which frequently render its use inadmissible.

Now we are informed of the discovery of a new hypnotic which, judging from the enthusiastic accounts of Kast and Rabbas ("Berliner klinische Wochenschrift," 1888, Nos. 16 and 17; "Internat. med. Presse" [Beilage zur "Internat. klin. Rundschau"], April 29, 1888), is devoid of all noxious properties, is perfectly safe and pleasant to administer, and is almost constantly certain in its action. The new substance is a compound of ethyl mercaptan with acetone, and, from the formula given by Kast $(CH_3)_2C=O \cdot (SO_2C_2H_5)_2$, may be designated by the chemical title of diethyl dimethylcarbynyldisulphinate, or, more euphoniously, by its commercial name of sulphonal. It is a colorless body, crystallizing in large plates which are completely devoid of taste and odor, are soluble in rather more than a hundred parts of water at ordinary temperatures, and are readily soluble in alcohol. Experiments made with it by the two authors mentioned have shown it to be a very serviceable hypnotic in cerebral excitability, whether due to organic lesion or not, in the sleeplessness of febrile and other acute diseases, and in the insomnia of the aged. Almost without exception, says Kast, sulphonal produces in from half an hour to two hours a sound and quiet sleep lasting from five to eight hours, from which the patient awakes refreshed and without the least disagreeable after-effect. These observations have been fully confirmed by Rabbas, who gives the new remedy the preference over amylene hydrate and paraldehyde as being more efficacious and more certain, and over chloral as being devoid of danger and free from unpleasant taste and odor and as producing a more lasting sleep. Its continued use does not render larger doses necessary and produces no deleterious effects on the appetite and digestion or upon the functions of the heart and lungs. It is given in doses of from thirty to forty-five grains, in capsules. It is a very stable substance, not being readily affected even by powerful chemical agents, so that presumably it will keep indefinitely without deterioration.

If sulphonal fulfills all the promise that the results obtained by the Freiburg physicians seem to offer, it will constitute one of the most valuable of all the recent additions to the *materia medica*. Experience with other drugs that have received similar enthusiastic encomiums when first discovered, but whose subsequent performance has failed to come up to the expecta-

tions which they raised, has taught us not to be too optimistic; still, the results which Kast and Rabbas have reported are sufficiently striking to demand careful attention and a repeated trial of the new remedy.

MINOR PARAGRAPHS.

THE MILLS SCHOOL FOR MALE NURSES.

ON Thursday of last week an event took place in New York that marks no less novel an undertaking than that of training men as nurses on the same basis that has worked so admirably in the case of women. Mr. D. O. Mills formally delivered to the Board of Public Charities and Correction a building erected at his expense,* of a capacity sufficient to accommodate fifty pupils and to serve for the pathological museum of Bellevue Hospital. The building is situated on the hospital grounds. Whatever may be the number of women in the community who have been trained as nurses, and however profound may be the general conviction that women are peculiarly fitted for nursing, there will always remain a certain demand for men in this capacity, and Mr. Mills's generosity seems to us to have been wisely directed.

JOSIAH BARTLETT.

ON the 4th inst. a monument was unveiled in Amesbury, Massachusetts, in the shape of a bronze statue of Dr. Josiah Bartlett, one of the signers of the Declaration of Independence and at one time Governor of the State of New Hampshire. Great as Dr. Bartlett's political services were, and absorbed as much of his time was in their performance, he was a man of no little importance in the medical profession of his period, and even more than the community at large must physicians feel an interest in Mr. Huntington's graceful act to perpetuate his memory in his native town.

PROFESSIONAL COURTESY.

THIS is what the "Journalist," in a chain of editorial paragraphs, calls a certain feeling which, it says, "feters the medical profession as with links of steel," often leading its members to overlook their obligations to the public in matters involving questions likely to reflect on their fellow-craftsmen. For example, according to the "Journalist," it restrains them from coming to the rescue of patients who are getting no benefit from other physicians, and seals their mouths when they might reasonably be expected to testify in court against their professional brethren. We fear it must be admitted that there is some foundation for our contemporary's strictures, but we are rather startled that, speaking of a project for a trades union among newspaper men, it should say: "It would be far better to imitate the example of physicians and let the union be tacitly understood rather than openly acknowledged"—in other words, to imitate an organization than which, to use its own expressions, there is none in existence "more powerful, more unjust and iniquitous."

ITEMS, ETC.

Billroth on Mackenzie.—The "British Medical Journal" publishes the following translation of a letter addressed to the "Neue freie Presse" by Professor Billroth, dated March 27th:

"With reference to your request for my opinion on Mackenzie, I can only reply that I have always warned people against passing a judgment on a man who, as a physician, occupies so difficult a position. I have never doubted the correctness of the diagnosis of my Berlin colleagues, but I have also

never been able to understand what political reasons had made it necessary to communicate this diagnosis to the whole world. It can not be admitted that Mackenzie with his vast experience has ever doubted the correctness of this diagnosis. If he behaved in such a way as to imply that he had some doubt about the correctness of this diagnosis, this could only be owing to pressure from above or from motives of humanity. I know such situations from my own experience. One is not inclined to disapprove the statements of one's *confrères*, but at the same time one is not inclined to tell the patient that his malady is incurable, for the known want of infallibility in medical diagnosis is almost the sole ray of hope to the unfortunate incurables. Falsehood in such cases becomes a moral act. The entire behavior of Mackenzie must, no doubt, be judged from this point of view. He did as a man and a physician what was still possible to be done when the unfortunate word 'cancer' had already been pronounced.

"In much the same terms as these I have on different occasions expressed myself as to Mackenzie's conduct. I ask you to consider this as a private communication, at least until the sad catastrophe has occurred in Berlin."

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 3, 1888:

DISEASES.	Week ending June 26.		Week ending July 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	8	4	6	1
Scarlet fever.....	162	37	118	22
Cerebro-spinal meningitis....	5	5	6	5
Measles.....	223	26	236	20
Diphtheria.....	139	42	102	32
Small-pox.....	6	0	4	1

The New Requirements at the College of Physicians and Surgeons.

—For the session of 1888-'89, and thereafter, as we learn from the "Announcement," persons who seek to matriculate at this college for the first time are required to undergo examinations for admission, with the following exceptions, viz.: 1. Applicants who declare themselves not to be candidates for the degree of M. D. from this college. 2. Applicants who present certificates of having been successful at examinations for admission to the School of Arts or School of Mines of Columbia College. 3. Applicants who present diplomas or certificates of graduation in arts, philosophy, science, or medicine, from recognized colleges or schools of science. 4. Applicants who present certificates from recognized colleges or schools of science to the effect that they have studied satisfactorily any or all of the subjects required for admission to this college, are admitted without examination in the subjects so certified to.

The examinations for admission are in writing, and in the following subjects, viz.:

1. *English*: The writing of a composition, in the form of a letter of not less than three hundred words, the subject to be announced at the time of the English examination. 2. *Latin*: At the option of the candidate, either (a) The translation into English of a short passage of average difficulty from one of the first four books of Cæsar's "Commentaries on the Gallic War," and the answering of elementary questions relating to the grammar of the passage; or (b) the translation of, and questions upon (as above), a short passage of average difficulty from the "Jugurtha" of Sallust; or (c) requirements as for (b), but the passage from the "Catalina" of Sallust. 3. *Arithmetic*: Prime and composite numbers; factors, divisors, and multiples; proportion; decimals, including percentage, simple and compound interest, and discount, but not, the technical parts of commer-

cial arithmetic; compound numbers and the metric system—the necessary tables and data being given on the papers. 4. *Algebra*: Definitions and notation; entire quantities; fractions; simple equations; as treated in the first two sections of Robinson's "New Elementary Algebra," or its equivalent. 5. *Plane Geometry*: Book I of Wentworth's "Elements of Geometry," or its equivalent. According to the results of his examinations, each candidate is either (a) admitted unconditionally, or (b) admitted conditionally, or (c) rejected. A candidate who has passed a satisfactory examination in each of the five branches is admitted unconditionally. A candidate who has passed a satisfactory examination in each of three out of the five branches is admitted conditionally. A candidate who has failed in three out of the five branches is rejected; but proper consideration is shown to candidates whose mother-tongue is not English. A person rejected, or "conditioned," in any branch or branches, is eligible for re-examination at any regular subsequent semi-annual examination, but at no other time, except by special vote of the authorities. No person admitted conditionally is permitted to appear for examination at this college in any one of the eight branches of medical study until he has been re-examined successfully at this college in all the "entrance" branches in which he has been "conditioned," except by special vote of the authorities.

Beginning with Commencement, 1888, the College Year is henceforth to consist of a period of vacation, extending from Commencement to about the 1st of October, and of an annual session of between eight and nine months, extending from the latter time to the following Commencement, which will be held on or about the 15th of June. At the same time the absolute number of required didactic lectures is not to be increased. A greater number of hours each week will thus be available for other exercises. Beginning with the session of 1888-'89, the work required of the students at this College who are candidates for the degree of M. D. will be distributed over three years of study, according to the curriculum set forth below. Adherence to this curriculum will not, however, be binding upon: 1. Any person who has matriculated at this College at any time prior to July 1, 1888, unless he has had due notice of the establishment of the same. 2. Any person who has been present at the entrance examinations held in May, 1888. 3. Any person who has been notified, as an individual, by authority of the secretary of the faculty, prior to July 1, 1888, that he would be eligible for matriculation without entrance examination, and who has not had due notice of the establishment of the said curriculum. For candidates for the degree of M. D., belonging to the above-described three classes, the required work will be as published in the annual catalogue of this College for 1887.

OBLIGATORY EXERCISES OF THE REGULAR CURRICULUM.

FIRST YEAR.—*Didactic lectures* in: 1. Anatomy. 2. Physiology. 3. Physics and chemistry. *Practical work* in: 1. Dissection. 2. Normal histology. 3. Physiological and medical chemistry. **SECOND YEAR.**—*Didactic lectures* in: 1. Anatomy. 2. Physiology. 3. Physics and chemistry. 4. Materia medica and therapeutics, including hygiene. 5. Pathology and practical medicine. 6. Principles and practice of surgery. 7. Obstetrics and gynecology. *Dissection. Clinical lectures at the Vanderbilt Clinic* in: 1. General medicine. 2. General surgery. *Practical clinical work* in: 1. General medicine. 2. General surgery. **THIRD YEAR.**—*Didactic lectures* in: 1. Materia medica and therapeutics, including hygiene. 2. Pathology and practical medicine. 3. Principles and practice of surgery. 4. Obstetrics and gynecology. 5. Ophthalmology. *Clinical lectures at the Vanderbilt Clinic* in: 1. Diseases of the mind and nervous system. 2. Gynecology. 3. Diseases of children. 4. Genito-urinary diseases, including syphilis. 5. Diseases of the

skin. 6. Diseases of the throat. 7. Diseases of the eye. 8. Diseases of the ear. *Practical clinical work* in the eight subjects enumerated immediately above under the head of "clinical lectures," and in obstetrics. *Practical work* in pathology and pathological histology.

In the examination for the degree, the clinical professors are each to propound one question to the candidate. Heretofore they have had no voice in the examination.

The Medical Society of the County of Clinton, N. Y., will hold its semi-annual meeting on Tuesday, the 10th inst., on board the steamer A. Williams, cruising northward from Plattsburgh in the waters of Lake Champlain.

The Lehigh Valley Medical Association will hold its eighth annual meeting at the Paxinosa Inn, near Easton, Pa., on the 15th of August.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 17 to June 30, 1888:*

WHITE, ROBERT H., Major and Surgeon. Ordered from Angel Island, California, to Fort Myer, Va. S. O. 142, A. G. O., June 20, 1888.

MUNN, CURTIS E., Captain and Assistant Surgeon. Ordered from Fort Klamath, Oregon, to Angel Island, California. S. O. 142, A. G. O., June 20, 1888.

TORNEY, GEORGE H., Captain and Assistant Surgeon. Relieved from duty at Fort Monroe, Va., and ordered to Fort Randall, Dakota Territory. S. O. 142, A. G. O., June 20, 1888.

McCREERY, GEORGE, Captain and Assistant Surgeon. Relieved from duty at Fort Meade, Dakota Territory, and ordered to Fort Monroe, Va., for duty. S. O. 142, A. G. O., June 20, 1888.

GORGAS, WILLIAM C., Captain and Assistant Surgeon. Relieved from duty at Fort Randall, Dakota Territory, and ordered to Fort Barrancas, Fla. S. O. 142, A. G. O., June 20, 1888.

MORRIS, EDWARD R., First Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 61, May 28, 1888, Department of Arizona, extended one month. S. O. 142, A. G. O., June 20, 1888.

POINDESTER, J. D., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month. S. O. 55, Department of Dakota, June 18, 1888.

SWIFT, EUGENE L., First Lieutenant and Assistant Surgeon. Ordered from Fort Spokane, Washington Territory, to Fort Klamath, Oregon, for temporary duty. S. O. 142, A. G. O., June 20, 1888.

McPARLIN, T. A., Colonel and Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Department of the Platte, June 20, 1888.

BROWN, J. M., Major and Surgeon, will take charge of the office and duties of the Medical Director, Department of the Platte, during temporary absence of Colonel McParlin. S. O. 52, Department of the Platte, June 20, 1888.

So much of Par. 3, S. O. 142, A. G. O., June 20, 1888, as relates to Captains GEORGE H. TORNEY and GEORGE McCREERY, assistant surgeons, is revoked. S. O. 147, A. G. O., June 26, 1888.

OWEN, WILLIAM O., Jr., Captain and Assistant Surgeon. Ordered to Fort Leavenworth, Kansas, for duty. S. O. 148, A. G. O., June 27, 1888.

WOODHULL, A. A., Major and Surgeon. Granted leave of absence for three months, to take effect about July 10, 1888. S. O. 148, A. G. O., June 27, 1888.

WOOD, MARSHALL W., Captain and Assistant Surgeon. Ordered to Fort Randall, Dakota Territory, for duty. S. O. 147, A. G. O., June 26, 1888.

SHANNON, WILLIAM C., Captain and Assistant Surgeon. Ordered to Fort Meade, Dakota Territory, for duty. S. O. 147, A. G. O., June 26, 1888.

McCREERY, GEORGE, Captain and Assistant Surgeon. Ordered to Fort Warren, Massachusetts, for duty. S. O. 147, A. G. O., June 26, 1888.

JOHNSON, RICHARD W., Captain and Assistant Surgeon. Designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, N. Y. (near New London, Conn.), on the 2d of July, 1888, and to continue during the months of July, August, and September; and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Division of the Atlantic, June 28, 1888.

GANDY, CHARLES M., First Lieutenant and Assistant Surgeon. Granted leave of absence for three months, to take effect on or after July 5, 1888. S. O. 145, A. G. O., June 23, 1888.

CLENDENIN, PAUL, First Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 59, Department of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the three weeks ending June 30, 1888:*

McMURTRIE, DANIEL, Surgeon. Detached from the Naval Hospital, Yokohama, Japan, and to return home.

GRAVATT, O. U., Surgeon. Detached from U. S. Steamer Michigan, and ordered to hospital, Yokohama.

EDGAR, JOHN M., Passed Assistant Surgeon. Ordered to the U. S. Steamer Michigan.

MACKIE, B. S., Surgeon. Ordered to the U. S. Steamer Ossipee.

PARKER, J. B., Surgeon. Detached from the U. S. Steamer Ossipee, and to wait orders.

CRANDALL, R. P., Assistant Surgeon. Detached from the Minnesota and ordered to the Saratoga.

SHIPPEN, EDWARD, Medical Director. Placed on the retired list, June 18, 1888.

SAYRE, J. S., Assistant Surgeon. Ordered to the Navy-Yard, New York.

BRADLEY, MICHAEL, Medical Inspector. Ordered to examination for promotion.

KERSHNER, EDWARD, Surgeon. Ordered to the Marine Rendezvous, New York.

WHITE, C. H., Surgeon. Detached from the Museum of Hygiene and to wait orders.

TRYON, J. RUFUS, Surgeon. Detached from the Marine Rendezvous and assigned to special duty in New York.

McCARTY, RUFUS, Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Mass., and ordered to the Yantic.

HENNEBERGER, L. G., Passed Assistant Surgeon. Relieved from special duty in New York and ordered to the Minnesota.

KITE, I. W., Assistant Surgeon. Detached from the Yantic and ordered to the Richmond.

Surgeons WOOLVERTON, WHITE, WOODS, and DU BOIS ordered for examination preliminary to promotion to the grade of Medical Inspector.

MOORE, A. M., Surgeon. Ordered to Naval Station, New London.

AUSTIN, A. A., Passed Assistant Surgeon. Detached from the Gedney, and to wait orders.

OWENS, THOMAS, Assistant Surgeon. Detached from the Naval Station, New London, and ordered to the Coast-Survey Steamer Gedney.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending June 30, 1888:*

WYMAN, WALTER, Surgeon. Detailed as member, Board of Examiners, vice Surgeon Fessenden, excused on account of physical disability. June 15, 1888.

FESSENDEN, C. S. D., Surgeon. Granted leave of absence for thirty days on account of sickness. June 15, 1888.

VANSANT, JOHN, Surgeon. Granted leave of absence for ten days. June 25, 1888.

MEAD, F. W., Passed Assistant Surgeon. Granted leave of absence for thirty days. June 28, 1888.

Society Meetings for the Coming Week:

MONDAY, *July 9th*: New York Ophthalmological Society (private); New York Medico-historical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *July 10th*: Medical Societies of the Counties of Chautauqua (annual), Clinton (semi-annual—Plattsburgh), Greene (quarterly), Jefferson (semi-annual—Watertown), Madison (annual), Oneida (annual—Utica), Ontario (annual—Canandaigua), Schuylar (semi-annual), Tioga (semi-annual—Owego), and Wayne (annual), N. Y.; Norfolk, Mass., District Medical Society (Hyde Park).

WEDNESDAY, *July 11th*: Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), and Worcester (Worcester), Mass., District Medical Societies.

THURSDAY, *July 12th*: Medical Societies of the Counties of Cayuga and Fulton (semi-annual), N. Y.

FRIDAY, *July 13th*: Medical Society of the Town of Saugerties N. Y.

SATURDAY, *July 14th*: Worcester, Mass., North District Medical Society.

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting of April 23, 1888.

The President, Dr. LAURENCE JOHNSON, in the Chair.

The Indications for the Surgical Treatment of the Deflected Nasal Septum, with an Analysis of One Hundred Cases, was the title of a paper read by Dr. W. C. JARVIS. He thought fixed rules could readily be discovered governing the surgical treatment of these cases, and to supply a want in this direction the analysis had been made. He cited one among a number of cases showing the necessity for established rules, that of a physician who had come a long distance to have him employ the snare in the removal of a supposed nasal obstruction. The patient had submitted to a number of operations at the hands of different specialists. Dr. Jarvis found, however, that no surgical interference was indicated. Those who had performed operations previously might give as an excuse the fact that the patient was very persistent in his entreaties to have something done.

He excluded from the one hundred cases those seen in dis-

pensary practice and some seen in private practice, as in them all of the details had not been obtained. In thirty cases the deflection had been to the right and cartilaginous in character; forty of the purely cartilaginous deflections were to the left, eight were bilateral deflections; in 12 per cent. of the osseocartilaginous deflections the deformity was directed to the right, and in 5 per cent. to the left nostril; in 3 per cent. the deflection was purely osseous, two being bilateral. In other words, in forty cases the septum was thrown to the right, in forty-seven it was thrown to the left, and in eleven it was bilateral. The principal indication for surgical interference was nasal stenosis. It was present in eighty-one cases. In twenty-nine there was complete stenosis of the right nostril, and in twenty of the left nostril; and incomplete stenosis of the right nostril in eighteen, and of the left nostril in fourteen. Among the most important complications was hypertrophy of the turbinated bodies. There was marked hypertrophy in 58 per cent. of the cases. This did not include those slight redundancies which were present in every case of deflected septum. Twenty-nine patients showed marked ear symptoms. In some the ear symptoms were the principal reason for undertaking an operation. The eye was involved in a marked manner in eleven cases. In some instances the eye trouble had resisted every ophthalmic measure, and was not cured until the integrity of the nostril had been restored. There was well-marked catarrhal headache in fifteen cases. Periodical hyperæsthetic rhinitis was present in eight cases, bronchitis in seven, polypi in four, hypertrophic rhinitis in ninety-four, simple atrophic rhinitis in two, and fœtid atrophic rhinitis in four. In some cases the voice was affected, and there were pharyngitis, ozæna, asthma, hæmorrhage, etc. The nasal stenosis which was so common might be absolute, or it might alternate between complete and incomplete obstruction of one or both nostrils. It frequently caused snoring and affected the health and comfort of the individual. The author thought that many patients had been operated upon for nasal stenosis when the nostril was only temporarily obstructed from an acute congestion of the turbinated tissues. A diagnosis could be made by the use of cocaine, by comparing cases, by the lapse of time, etc. In a large number of cases the obstruction acted as a dam, causing an accumulation of the nasal secretions; here an operation was necessary to open the gutter.

Dr. BUCKLIN thought that the subject was a growing one, and that there were more facts which might be alluded to. In discussing a paper by Dr. Bosworth not long before, Dr. Jacobi had asked of what size the nasal passages should be to admit sufficient air in respiration. A very small tube was sufficient in intubation of the larynx. The speaker thought there should be room for the mucous membrane of the turbinated bones to have the usual play necessary in the rapid changes of temperature of ten or more degrees which often took place in our climate. The swelling and contraction of the turbinated tissues varied with the temperature and according to the health of the individual. Owing to the vacuum created, he thought more harm came from trying to breathe through a nostril which was alternately obstructed and open than would occur if complete stenosis existed. Tenacious mucus formed as a result of connective-tissue changes in nasal stenosis, and relief of the stenosis would fail, at least for some time, to give relief from the catarrh which was one of the symptoms that brought patients to the physician. Regarding the influence of nasal stenosis on phthisis, one young man on whom he had operated was suffering from symptoms of phthisis, which disappeared after the nasal obstruction had been removed, and he gained a pound weekly for some weeks subsequently. The operation was of great benefit in relieving and preventing catarrhal deafness.

Dr. C. C. RICE did not sympathize with those who were so generally condemning nasal surgery. He thought that when done in a mild, proper manner, it was a less heroic method of treatment than that so commonly employed, especially a few years ago, with nitrate of silver, the douche, etc. His views had lately changed somewhat regarding surgical interference in some cases of atrophic rhinitis; it was of benefit not only in overcoming deformities, but also in its healthful stimulating effect upon the entire mucous membrane. He preferred, when it was possible, to get the increased space by operating upon the soft structures, upon the turbinated tissues, rather than by touching the septum. The turbinated structures behaved much better under operative interference than the cartilaginous or bony septum. He thought acute rhinitis was always one of the symptoms of chronic rhinitis, and it was possible to cure it by operations upon the turbinated structures.

Dr. PHILLIPS thought the amount of air required by the lungs had little to do with the question of nasal stenosis. He wanted free breathing space through both nostrils. When there was an obstruction, operative interference must be resorted to. There were many ways of doing the operation. The saw was, in his opinion, the best instrument. The after-treatment was very important. The surfaces should be kept separated to avoid adhesions. Therefore he insisted on seeing the patient every day when possible.

Dr. TANSLEY agreed with Dr. Jarvis that ear trouble was a common complication in these cases, but there were many people suffering from difficulty with the hearing who had no nasal stenosis. They had nothing but an atrophic condition of the nasal membrane. During the past year he had seen among his aural patients only five with bent septa. One of the great objections to giving the patient ether, and breaking up or taking out a piece of the bent septum, was the liability of suppurative otitis. He would not allow one of his patients suffering with otitis to be operated upon in the nose unless the posterior nares were plugged to prevent mucus and blood from getting back into the Eustachian tubes.

Dr. BUCKLIN remarked that his patient's ear difficulty and the nasal symptoms due to a deflected septum had preceded the atrophic rhinitis.

Dr. BEVERLEY ROBINSON had, in several cases of deflected nasal septum, a condition which might be described as ridges along the septum, operated for the resulting stenosis, and for a few weeks had been gratified with the amount of relief given to the breathing, but, unfortunately, the passages had again closed. He thought many people who were suffering from catarrh had it largely as a result of an abuse of the spray, douche, etc. In the majority of cases he found the cautery and caustics preferable to the drill and the saw.

Dr. JARVIS said that, when the snare was used in operations upon the septum, the wire should be extremely fine and should cut like the edge of a knife. By the open treatment of the wound speedy union would be secured and purulent otitis media would be avoided.

Meeting of May 28, 1888.

The President, Dr. LAURENCE JOHNSON, in the chair.

Report on the Sanitary Condition of the Croton River Water-shed.—Dr. JOHN C. PETERS presented a report which was supplementary to one that, as a member of a committee appointed by the society, he had presented about a year before, the object of the report was, if possible, to induce the authorities to take action in abating the nuisances existing on the Croton water-shed, which were polluting the waters supplied by the Croton aqueduct to New York. Railroad and land

speculators were doing what they could to induce people to settle in the neighborhood of the lakes supplying the Croton River, and had issued a pamphlet in which were pictured in glowing terms the beauties of the country, the excellent fishing and hunting opportunities, etc., and among other statements there were some false ones regarding the drainage of certain towns and hotels being away from the lakes instead of into them. There were three railroads running through this region, and the probabilities were that the population would be doubled within two or three years, and that the amount of pollution of the Croton waters would be quadrupled. The investigations of Dr. Lucas, about three years ago, had shown that on the Croton water-shed there lived twenty thousand people, and there were many barn-yards, condensed milk factories, thousands of privies, etc., draining into the Croton waters.

The water drank by the citizens of New York contained over five times as many germs as that used by the people of Berlin, and twelve times as many as that of the people of Boston and of London. It contained about one hundred and ninety-two thousand bacteria to the pint. Of course, many of these were simply water bacteria, but the entire number was a general indication of the number of the more harmful varieties, those coming from sewage, etc. The possibility of contamination of the waters at the lakes or at their source with the germs of scarlet fever, diphtheria, etc., was dwelt upon. The reporter was convinced that, if the law was enforced, all nuisances on the Croton water-shed could be abated at once. The State Board of Health had the power to act, provided the officials of the city of New York would request them to do so. The nuisances could also be abated by action at common law brought before a justice of the supreme court, but the legal expenses would have to be borne by the city to be benefited. Since the committee appointed by the county society last year had not been able to get the city officials to take action, he thought something could now be done through the State Senate Investigating Committee, which also had the power to inquire with regard to the purity of the future water-supply of the city through the new aqueduct. Resolutions embodying these views were passed, to be signed by the president and secretary, and forwarded to the State Senate Investigating Committee, the Department of Public Works, the Health Department, and the Croton Water Commission.

Acute Articular Rheumatism in the Nursing Infant.—

Dr. HENRY KOPLIK read a paper on this subject (see vol. xlvii, page 673).

NEW YORK CLINICAL SOCIETY.

Meeting of February 24, 1888.

The President, Dr. ROBERT ABBE, in the Chair.

The Dangers of Intestinal Puncture in the Treatment of Tympanites.—Dr. B. FARQUHAR CURTIS read a paper with this title (see vol. xlvii, p. 628).

Dr. H. M. BIGGS (who at a previous meeting had reported a case of fatal pneumothorax caused by an exploratory puncture with the hypodermic needle [see vol. xlvii, p. 49], and had also brought up the subject of the dangers of the indiscriminate diagnostic use of the hypodermic needle at a meeting of the Society of the Alumni of Bellevue Hospital (see vol. xlvii, p. 162)) spoke of a case in which the anterior abdominal wall had been inoculated from a cancer of the liver by puncture with an exploring needle. He wished to be understood as referring to the dangers, not from aspiration, but from puncture alone. The first operation was attended, of course, by most of the dangers arising from a simple exploration, but it was often followed also by other complications, the nature and dangerousness of which

had long been well appreciated, while exploratory puncture alone had generally been regarded as absolutely free from any danger. To the cases that he had already mentioned he would add one of the conversion of a simple into a purulent pericarditis, and one of the conversion of an ascites into a purulent peritonitis. He had not thought it necessary to cite individual cases of the conversion of a simple pleurisy into empyema, because of their comparative frequency. A large number of such cases had been recorded. In regard to the production of pneumothorax by puncture of the lung with an exploring needle, it had seemed to him possible that this condition might be produced more frequently than was ordinarily supposed, and that the occurrence of marked symptoms might depend largely upon the condition of the other lung. If it was healthy, no symptoms or only slight symptoms might follow and the condition be gradually removed. In each of the cases reported the other lung had been previously rendered practically useless by disease. Cases of pneumothorax occurring without any known cause, when no disease of the other lung existed, had been reported in which recovery took place. Some of these might have followed puncture with an exploring needle.

Dr. CURTIS recalled a case of inoculation of sarcoma in the subcutaneous tissue by the tapping of an intra-abdominal tumor with a trocar, reported by Nicaise.

Dr. G. E. MUNROE mentioned a case of operation for acute peritonitis following rupture of a perityphlitic abscess into the general peritoneal cavity. Being embarrassed by the extrusion of the enormously distended intestine through the abdominal incision, he had attempted to draw off the gas through a hypodermic needle, but failed, as it almost immediately became clogged with feces, and the withdrawal of the needle was followed by such a considerable flow of fluid feces that some Lembert sutures were required. The case illustrated the danger of perforation of a distended viscus by any instrument of such small caliber that it might, on account of clogging of its lumen, be unable to relieve the distension prior to its withdrawal, and the speaker suggested that probably the larger needle of the aspirator might be the safer instrument to use on this account.

Dr. SWIFT spoke of a case in which an exploratory puncture with a moderate-sized aspirator needle was followed by the withdrawal of considerable blood into the aspirator and by hæmoptysis. No further symptoms developed immediately, but the patient himself gave this—in another hospital—as the beginning of his sickness. He went on to the ordinary history of phthisis. At a recent meeting of the Medical and Surgical Society, when this question came up for discussion, the principle had been laid down that, in puncturing cysts in which there was any tension, enough fluid should be withdrawn to allow the sac to collapse.

Dr. KATZENBACH spoke of a case of a mulatto nurse-maid who, in 1881, was attacked with acute pleurisy and extensive effusion. An exploratory puncture was made with a hypodermic needle, and clear serum was obtained. No antiseptic precautions were observed. Within a fortnight the temperature rose, diarrhoea set in, and free perspiration appeared. Another puncture revealed pure pus—probably in an encapsulated cavity. A single aspiration was followed by rapid and complete recovery.

Dr. J. W. ROOSEVELT reported a case of serous pleurisy where a puncture with a hypodermic needle was followed in forty-eight hours by a chill, and afterward by the presence of pus; also two cases of dilated gall-bladder where the use of the needle produced acute peritonitis and death. He protested against the early use of the needle for diagnostic purposes in suspected cases of perityphlitis. When it was remembered that the needle might penetrate the intestines and on its withdrawal

leave fecal matter in the peritoneal cavity, and that the intestinal wound might easily leak, he thought the proceeding dangerous. Perityphlitic abscesses rarely ruptured early into the peritonæum—in fact, they rarely ruptured into that cavity at all. To avoid a possible remote danger by introducing an actual and present one was not very rational. He insisted on real antiseptic precautions whenever the needle was used, the needle and the skin being as thoroughly cleansed as if a severe surgical operation were contemplated. He thought the needle was too often used for “diagnosis” when the real object would be better expressed not by the word diagnosis but by curiosity.

Dr. G. M. TUTTLE referred to several cases observed in the hospitals in which exploratory puncture of the chest had been followed by empyema not previously existing, but added that since he had used careful antiseptic precautions no such accident had occurred to him. He alluded to a case in which the pricking of a strangulated piece of intestine with the needle had produced an escape of feces. He considered puncture of the gut for tympanites a dangerous procedure. In four cases of perityphlitis he had searched for pus with the needle, and had found it, and the patients had recovered.

Dr. FRANK HARTLEY waited until the swelling approached the crest of the ilium or Poupart's ligament, when, if it was thought to be perityphlitic, and the peritonæum was lifted by the abscess, or the two layers were united, he used the needle. If he thought it was intraperitoneal, he preferred to make an incision; when he was in doubt also he preferred an incision. He had never operated earlier than on the fifth day.

Dr. CURTIS referred to the danger of waiting in cases of perityphlitis, and spoke of cases in point.

The PRESIDENT referred to the practice of veterinary surgeons, who sometimes relieved horses of wind colic by introducing a trocar into the intestine at a point in the loin where it was not covered with peritonæum.

Dr. D. B. DELAVAN referred to a case of pleurisy with effusion, in tapping which the needle of the aspirator had been broken accidentally, and the fragment had remained in the lung for more than eight years without producing serious results. He believed that in many instances there was far less danger in the use of the needle for purposes of exploration than there was in its omission.

Dr. J. H. EMERSON thought that in tapping a much-distended viscus the use of a cannula might prevent the escape of fluids into the peritonæum, and that a reason why this was found to occur when there had been great distension might be found in the paralysis of the muscular fibers of the walls of the viscus from stretching which promoted their contracting so as to close the puncture.

Dr. ROOSEVELT said that, in the two cases of distended gall-bladder referred to, enough fluid had been removed to relieve the tension.

Dr. J. E. WINTERS thought that his hospital observations in past years had shown that exploratory puncture of the chest either caused the appearance of pus or retarded recovery. No antiseptic precautions had been taken at that time. Since those days he had resorted to the practice but three times. Two of the three patients had died, and they had been the only ones with simple pleurisy that he had lost. In the third, empyema occurred, although antiseptic precautions had been taken.

The PRESIDENT thought that statistical collections of accidents gave an unfair semblance of danger to operations that were perfectly safe when resorted to cautiously. In regard to the points brought out by Dr. Biggs, the lessons to be drawn were, he thought, always to relieve tension of the sac aspirated, to make the procedure aseptic, to avoid the peritoneal cavity, and not to scratch the lung.

An Inherited Idiosyncrasy with regard to Anæsthesia.—Dr. C. D. SCUDDER reported a case in which the administration of ether was followed by nearly fatal results. The patient was a vigorous woman, about twenty-three years old, single, a brunette, and perfectly healthy in every way, except that a cellulitis of the parts about the right ear had complicated an otitis media suppurativa. In order to make a free incision down to the mastoid process, ether was given. Before taking it, the patient stated that there was something very important which she felt sure the doctor should know, but which she could not recall. A reasonable length of time was allowed her to remember this matter of importance, and then, as she failed to do so, etherization was begun. The ether was taken so poorly that it had to be abandoned before the patient was completely under its influence. The slight operation was performed rapidly, and in a short time the young woman was apparently herself, although a little nervous. After half an hour or more she was left in the care of some friends. A few minutes later the doctor was summoned in great haste. On his arrival, he found the patient, as it were, moribund. Breathing had ceased, the pulse could not be felt, and the face was pinched and sharply drawn, resembling closely the *facies mortis*. Nearly an hour elapsed before the patient was fully resuscitated. This case recalled one in which death had actually ensued in one of the dispensaries, the patient, a woman, having been left alone in one of the rooms, on the supposition that she had quite recovered her normal condition. When the patient, whose case had been related by the speaker, was quite well, she said that what she had wished to say before taking ether was that her mother, after being anæsthetized many years before, had only been brought to life again by the strenuous exertions of medical attendants continued through three or four hours.

Perityphlitis.—Dr. SCUDDER also reported a case of perityphlitis in which the operation was deferred until about the thirteenth day. The pus removed at that time was extremely fetid. Although the drainage was perfect, pus was subsequently discharged by the rectum and by the bladder. The patient recovered after a tedious convalescence. The full details of this case would be published at some future time.

Meeting of March 23, 1888.

The President, Dr. J. WEST ROOSEVELT, in the Chair.

Resection of the Shaft of the Tibia for Osteo-myelitis.—

Dr. F. W. MURRAY presented a boy whose history was as follows: He was admitted into St. Luke's Hospital on August 10, 1887. Ten weeks previously he had walked a distance of sixteen miles, and at the end of his journey pain developed suddenly in the ankle. The pain increased in severity, the leg became very much swollen, and the boy had fever and delirium. When he was brought to the hospital the foot, ankle, and leg were very much swollen and oedematous. There were four or five openings on the front of the leg which discharged pus. The probe came in contact with dead bone. A few days later an incision was made from below the upper epiphysis down to and a little below the ankle joint, and the periosteum was laid back. It was lined with a gelatinous material, poured out presumably as the first step in the formation of new bone. The cartilage of the lower epiphysis being intact, it was decided not to amputate. After removal of nearly the entire shaft the wound was allowed to fill with blood-clot, but it failed to organize. The boy remained in bed about six weeks, when he was allowed to move about. The bones had been growing very fast. A few openings still remained on the leg, and there was very fair motion in the ankle joint, with some tendency for the leg to bow outward, due probably to his having walked on it too early.

Dr. ROBERT ABBE inquired whether at the end of his journey the boy had sat down where it was cold; also whether the bone removed was one sequestrum.

Dr. MURRAY replied that the boy had sat on the piazza of a hotel, and that it had been on a hot day. The bone was removed in pieces. Only a thin lamina of the posterior portion of the upper end of the shaft remained.

Ataxic Paraplegia.—Dr. W. GILMAN THOMPSON presented a patient, and said that the case was of interest in regard to its distinction from ordinary locomotor ataxia. The patient, a waiter, thirty years old, had been admitted into the Presbyterian Hospital three weeks before, and had given a good family history, with no record of syphilis. He had been a moderate drinker and an excessive cigarette-smoker. He had also indulged in sexual intercourse to excess. Five years before, he had had his left testicle removed for what he stated had been "tubercular disease." Since then his sexual power had been good until the onset of his present malady, now nine months ago. At that time he noticed extreme difficulty in micturition; there was complete loss of power to start the stream of urine, but, when once started, it was full and uninterrupted to the close. After having tried various postures and other means of starting the stream, he had at last found that by inserting his forefinger into the rectum and pressing the prostate upward he could start it. This practice he had continued to follow. He was obliged to pass urine very frequently, and had a slight burning pain along the urethra after each micturition. Four months ago he first noticed difficulty in walking, and his gait became so unsteady that he was often suspected of being intoxicated. He had no pains in the legs, no trouble with the upper limbs, and no ocular disturbances. For about two months before his admission he had had a dull aching pain in the lumbar region and the perinæum. He had often noticed spasms of the muscles of the lower limbs while he was in bed, at times causing great annoyance. He had had frequent attacks of indigestion, with nausea and vomiting, but unaccompanied with gastralgia. There was no headache. The bowels were decidedly constipated. On his admission, February 29th, his general nutrition was fairly good; he was somewhat anæmic; physical examination showed the thoracic and abdominal organs to be normal; nothing wrong was found with the urine; and the temperature was normal. Rectal examination showed the prostate slightly enlarged, but not tender. No vesical calculus was found. A No. 27 (Eng.) sound passed without difficulty. On passing bulbous bougies, a slight stricture was found just beyond the meatus. The patellar and plantar reflexes were greatly exaggerated, especially on the left side; the abdominal reflex was normal; the cremasteric was normal on the right side. The conduction of cutaneous sensation was good, with slight hyperæsthesia over the lower limbs. The thermic sense, the galvanic and faradaic reactions, and the pupillary reactions were normal. The accommodation was good. He had always been somewhat flat-footed. In walking, the toes did not fall, nor did he lift his feet unnaturally high, but the inco-ordination of both legs was so decided as to make the balance extremely difficult. The co-ordination of the upper limbs was normal. The Romberg symptom was present, the ankle-clonus well marked, especially on the left side. There were no girdle pains. There was a moderate spastic condition in both legs.

The speaker remarked that this disease was of relatively infrequent occurrence. Westphal had reported five cases in the "Archiv für Psychiatric," viii and ix; a similar case had been given by Suckling in the "Lancet" for January 9, 1886; and Gowers had drawn an excellent clinical picture of the disease in his "Diseases of the Spinal Cord." The lesion was a combined sclerosis, involving both postero-external and lateral spinal

tracts, and the speaker was inclined to refer the symptoms connected with micturition and the extreme constipation to involvement of the centers in the lumbar enlargement. The disease was to be distinguished from myelitis by the very gradual onset of paresis (which even now was only slightly apparent) and by the irritative phenomena; from locomotor ataxia it was distinguished by the greatly exaggerated reflexes, the absence of fulminant pains, etc. But little was to be expected from treatment, and thus far the means employed to relieve the difficult micturition—such as tamponing the rectum, faradization, etc.—had been ineffectual, and the patient now used a catheter. The speaker asked Dr. Abbe whether he thought the kind of vesical symptoms present in this case could have been caused by the enlarged prostate.

Dr. ABBE replied that they were more likely, he thought, to have been due to spasm in the muscles of the bladder. The spasm was overcome by pressure, and then the stream flowed freely until the bladder had been completely emptied. He thought with Dr. Thompson that, if the difficulty with micturition had been due to tubercular enlargement of the seminal vesicles, it would continue until the bladder was quite void.

The PRESIDENT had seen three cases of combined sclerosis of the postero-lateral and antero-lateral columns of the cord, all in women; and in all there had been the same symptoms as in the case presented, excepting the urinary trouble.

The Relation of Puerperal Septicæmia to Maceration of the Fœtus was the subject of a paper read by Dr. MUNROE.

Dr. ABBE remarked that his experience with the class of cases considered in the paper had been very limited. Recently he had seen a marked illustration of the septic action of a retained dead fœtus at about the tenth week of pregnancy. The patient, at about the second month of pregnancy, lay in bed, playing with her child of two years, bouncing it up and down on her abdomen, which resulted in suddenly turning the uterus and locking it under the sacrum. She suffered from pain for a week, and then the trouble was discovered. A physician replaced the uterus, which relieved her of pain. After two days, however, she began to have fever, and at the end of about two weeks she was in a septic state. The sepsis was attributed to pyosalpinx or some other form of pelvic disease. Preparations were made to do laparotomy at any moment should it be necessary. Finally, as it was thought there might be a dead fœtus, a small sound was introduced into the uterus, and within twenty-four hours the patient was delivered of a putrid fœtus, after which she made a rapid recovery.

Dr. R. J. HALL had had no surgical experience with the class of cases under discussion, but he thought the author might have further strengthened his position by allusion to two additional facts. Mikulicz had shown that, even in cases of a slight wound of one finger, blood taken from the opposite hand frequently contained septic germs, proving that even in septic conditions of the minutest kind germs were poured into the blood and produced their characteristic effect. A patient might, he thought, carry a dead fœtus three or four weeks without any ill result, and then on the development of a small septic focus elsewhere, infection of the fœtus might take place. The second fact was that the dead fœtus, although not having undergone decomposition, might contain poisonous ptomaines, which produced septic intoxication as distinguished from septic poisoning or septicæmia proper. There were a number of cases in surgery in which septic symptoms were present which could be accounted for only by the influence of ptomaines, germs not being present. That was the explanation of the septic symptoms in a case of Dr. Sands's, being that of the largest hæmatoma of the thigh on record. An operation stopped the symptoms of septic intoxication at once.

Dr. J. B. HUNTER fully agreed with those who spoke of the possibilities of danger in cases of retained dead fœtus, but he had been impressed with the fact that it had often been carried a long time without producing any symptoms. He did not think there could be putrefaction without some symptoms being produced. Where air had had access to the uterus there was much more danger of putrefaction. When the fœtus died from an extraneous cause, and no air reached it, he thought it might remain a long time without undergoing decomposition, just as occurred when it was killed by electricity in extra-uterine gestation.

The PRESIDENT asked Dr. Hunter whether he thought the membranes would do much to oppose infection.

Dr. HUNTER thought they would not, but, inasmuch as the cervix was not much dilated, there would be little danger of infection through the vagina. If the cervix were not closed, the membranes would offer very little resistance. But he had not seen a sufficient number of cases on which to base general conclusions. He could not imagine any grade of septicæmia developing which one could not detect if he were on the watch for it, and the presence of any symptoms of infection would, he thought, warrant immediate interference.

The PRESIDENT asked whether, if no symptoms had developed, he would recommend waiting.

Dr. HUNTER replied that, if there were no doubt regarding the death of the fœtus, he would, on general surgical principles, interfere at once. But it was often difficult to determine positively whether or not the fœtus was dead. Regarding intra-uterine irrigation after removal of the fœtal remains, and also regarding dilatation of the cervix, he had found no instrument so serviceable as one called the surgical pump. For dilating the cervix it was far superior to Barnes's dilator. Either air or water could be employed; and for washing out the uterus it excelled the syringe.

Dr. MUNROE asked Dr. Hall how long it required, after bacteria gained entrance to the body, for the manifestation of their poisonous effect.

Dr. HALL said that erysipelas, for instance, which was caused by one kind of bacteria, might become manifest within two hours.

The Hypodermic Use of Antipyrine in Neuralgia.—Dr. W. D. McKIM made some remarks on the use of antipyrine by hypodermic injections in neuralgia, with the object of learning what had been the result of the experience of the other members. He had been surprised that so little had been said regarding the treatment since Germain Sée's enthusiastic indorsement of it in July or August last. A large series of cases had been experimented upon, especially those of neuralgia, and a few months later Fränkel, of Breslau, had reported excellent results. So far as the speaker had been able to learn, the method had been little practiced in England or America. Sée's method of using the drug consisted in dissolving fifteen grains in an equal quantity of water. This he used sometimes alone and sometimes in conjunction with the internal method. Finding that this degree of concentration caused pain at the seat of injection, he had increased the quantity of water by one and a half. This caused less pain. Fränkel had found that eight grains of antipyrine had an equally good effect. The speaker had made thirty-seven injections, all in one patient who was suffering from crural and sciatic neuralgia, the crural neuralgia predominating. Before the injections were made the patient had for three or four weeks been slowly improving, but there had been many relapses. The treatment had consisted in the frequent and systematic use of Paquelin's cautery, in addition to tonics, rest, etc. After a time these had seemed to do no more good, when he tried galvanism daily; he also tried aconiti-

tine, the prolonged use of dry heat, and blisters; large doses of quinine were also given. All these measures seemed to be of some benefit for a time, but the effect was not permanent. He then began the use of antipyrine internally, which gave much better results than had been obtained from the other measures. But this finally ceased to be of benefit, and he then tried the use of the drug by hypodermic injection. Fifteen grains were injected into a part supplied by the anterior crural and middle cutaneous nerves. The relief was very marked indeed. The patient complained of severe pain for five or six seconds after the injection, and then instant relief came. During the remainder of the day and night he was entirely free from pain, which was something very unusual. The next day the speaker proposed to give two injections of five grains each, but the patient was so delighted with the result the day before that he insisted on having four injections, which made twenty grains. The effect was as before, giving him relief from pain for twenty or more hours. On the third day five injections were made over sensitive points, and these were repeated day after day with thoroughly satisfactory results. Most of the injections were made among the cutaneous branches of the anterior crural nerve. On one occasion he probably made an injection in the near neighborhood of the sciatic nerve, as it caused pain in the foot and moderate aching for a day or two afterward. The injections had been thirty-seven in number, and the results had continued to be satisfactory as at first. The patient was very unruly, which would account for the persistency of the case. The injections seemed to render the skin completely anæsthetic for a space from two to four inches in diameter, for from fifteen to twenty-four hours. There was no pain except for a few seconds following the injection, and then came complete relief. He had employed as much as twenty-five grains, injecting but five grains at a single point. No abscess and but very slight induration had at any time occurred.

Dr. L. B. BANGS had used antipyrine by hypodermic injection for the relief of pain in different forms of neuralgia, in traumatism, and in some cases of operations, with, in general, the beneficial results described by Dr. McKim.

Dr. McKIM said, regarding bad results from the use of the drug, that on one occasion it had caused urticaria of the arm, and pain, apparently from injecting the drug too near the sciatic nerve.

The PRESIDENT had seen, after the internal administration of antipyrine, an eruption like that of measles develop in two cases. It faded in about six hours. In one or two cases of typhoid fever its administration had been followed by pretty severe collapse. He had seen nausea and vomiting in a good many cases.

Dr. HALL, while in Heidelberg the year before, had had a temperature of 104.75° F. He was attended by Erb, who gave him antipyrine in doses of fifteen grains every three hours. He took sixty grains. At the end of that time his temperature was subnormal, and he was considerably weaker than he had been after recovering from a mild attack of typhoid fever a few months before. When he asked Erb if that was not pretty heroic dosing, the reply was that he had a temperature which required pretty heroic dosing. He had had no bad effects from antipyrine, but the effects of acetanilide had been such that he had given up its use altogether.

Dr. THOMPSON had used acetanilide in three-grain doses to reduce the temperature, which had reached 105° F., in a case of otitis media following diphtheria. The temperature fell, but he was called back after three hours and found an eruption on the patient's face which resembled that of measles, while on the body there was an eruption resembling urticaria. He attributed the eruption to the drug, and ceased its use. Two

days later he gave the drug again, and it caused a similar eruption within two hours and a half from the time it was administered.

The Use of Antipyrine in Whooping-cough.—Dr. L. E. HOLT spoke of this treatment, which had been introduced only a few months before. He had tried it in six or seven cases in children about five years of age. Two-grain doses at intervals of three hours were given, a double dose being administered at bedtime. There had been very marked relief within twenty-four hours, in the reduction both of the number of spasms and of their severity. The diminished severity of the spasms during the night was very marked. In one child which had had from twelve to fourteen spasms during the night the number was reduced within forty-eight or seventy-two hours to two or three, and it was enabled to sleep without difficulty. In some of the cases belladonna had been given previously without material benefit. The speaker had never seen collapse follow the use of antipyrine.

SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

Meeting of February 1, 1888.

The President, Dr. HERMANN M. BIGGS, in the Chair.

Arthropathia Tabidorum.—A paper with this title was read by Dr. PARKER SYMS. (See page 1.)

Dr. L. PUTZEL conceded that this was a different disease from rheumatoid arthritis, but went further in thinking it was not like ordinary arthropathies, but had been found hitherto only in locomotor ataxia.

Six years ago the speaker had seen a man who had sustained a head injury twenty-five years previously, and had been "out of his head" for three months at that time. For years after he had had pain in the cervical spine. Shortly before he was first seen the patient had gone to bed feeling as well as usual, but his wife had been awakened by finding him in a convulsion of the upper limbs, the lower limbs not being involved. On the return of consciousness he had had severe pain in both arms, which soon became swollen, and the skin turned black from cutaneous hæmorrhage. This had disappeared in two weeks, but the shoulder joints had remained painful and tender, and since then had undergone partial ankylosis, while the head of each humerus was distinctly enlarged. If the history had not been taken into consideration, the condition would have been regarded as rheumatoid arthritis, but it was evidently an arthropathy dependent on nervous lesion, probably of the roots of the brachial nerves.

Joint lesions which resembled rheumatoid arthritis to an equal extent were often found in nervous affections, especially after injuries to nerves. In Charcot's joint disease the inception and course differed entirely from those of rheumatoid arthritis and of ordinary arthropathies. The chief points of difference were the great suddenness of onset, painlessness, the enormous effusion of fluid, the swelling of a great part of the limb, and excessive mobility of the joint. In some cases there was very rapid wasting of certain adjacent muscles, entirely out of proportion to the duration or severity of the joint trouble.

As to pathology, we were all at sea. Charcot had at first thought that the lesion was in the anterior horns, which would explain the rapid wasting of muscles sometimes observed. Buzard had surmised a center of nutrition of the bones in the medulla oblongata, and shown the frequent association of the joint lesion with gastric crises. But the anatomical proof of these theories had not been brought forward. Peripheral neuritis had also been regarded as the cause, but, while this was found not infrequently in locomotor ataxia, it might be absent

in cases of tabetic joints. The question was, therefore, still an open one.

Dr. SYMS remarked that Dr. Putzel had spoken of the gastric crises as being prominent in these cases. It had not been mentioned in the speaker's paper, as it had not occurred in the cases he had seen and was not spoken of by the German authors he had read, and was, he thought, not so common as one or two of the English writers would make one suppose. The following were his conclusions: 1. That it was a peculiar disease, depending on tabes. 2. That it was due to trophic disturbance. 3. That it was of the nature of a degeneration, and not of an inflammation. 4. That when the operation was called for, excision of the knee was justifiable, provided the general health was fair and no inco-ordination was present. The speaker asked Dr. Putzel as to the relation of syphilis to this disease.

Dr. PUTZEL in reply said he was opposed to the current opinion of neurologists that there was a large proportion of cases traceable to syphilis.

Infantile Spastic Paralysis.—Dr. R. H. SAYRE presented a case with the following history:

A. M., twelve years old, of neurotic family. The child was born at full term and naturally; was stout and healthy during infancy, but showed no disposition to move about as children generally do, and at eight months was unable to sit up. Never had convulsions, but had difficult digestion. Micturition was always slow and straining, which symptom persisted at the time when he was first seen by the speaker. The child had been treated when five years old by massage, steaming, braces, etc., with some benefit.

He was first seen by Dr. Sayre on September 6, 1887. Examination showed good intelligence and no difficulty in speech. The legs crossed one another, the knees being red from friction, and he was totally unable to walk. There was contraction of the adductors, the tensor vaginae femoris, the hamstrings, and the tendo Achillis of both legs, the flexors of both arms, the extensors of the right hand, and the opponens pollicis. He was able to stand supported by a chair, but could not rise from the floor. The co-ordinating power in the hands was almost lost. The knee-jerk was exaggerated and the ankle clonus pronounced. The reaction to the faradaic current was much diminished. The right testicle was soft and the left undescended. The foreskin was tight and the frenum short, but there was no actual phimosis. Touching the meatus produced a spasm of the entire body. The frenum was divided and the prepuce nicked so as to allow it to glide freely over the glans, the adhesions around the corona having been broken up. After the wounds had healed the various contracted muscles were stretched daily; massage was also employed, and the faradaic current applied to the weakened extensors.

Within a week he ceased to twitch at night, lay with legs separated, and was able to pass water freely. He could now dress and undress himself, sit up on the floor, crawl on his hands and knees, and walk a short distance with the aid of a cane. The co-ordinating power in the hands had so much improved that he could cut out pictures with scissors.

Dr. PUTZEL thought that Dr. Sayre's case showed the most rapid improvement he had ever seen or heard of in cases of that kind. In cases where the lower limbs alone were involved galvanism caused some improvement, but it was slow, and, as Dr. Sayre had used faradization, the speaker thought for this reason the improvement not to be due so much to electricity as to the other treatment employed. He thought that phimosis had nothing to do with the spastic symptoms. A long-continued course of massage, galvanism, and every-day exercise of muscles under supervision would produce considerable improvement in the majority of cases.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of June 13, 1888.

The President, Dr. J. SOLIS-COHEN, in the Chair.

The Management of Delivery prior to the Seventh Lunar Month.—Dr. WILLIAM H. PARISH read a paper on this subject.

In the management of delivery prior to the seventh lunar month, he said, the welfare of the mother was alone considered. The non-viability of the embryo or fœtus removed it beyond consideration. It was true that the question as to whether the threatened abortion or miscarriage was inevitable or not would frequently arise, and would challenge the most anxious study, for upon the continuance of the pregnancy hung the life of the intra-uterine being if it was still living. It was his purpose, however, to discuss the management of only the inevitable deliveries prior to the viability of the offspring, and not to treat *in extenso* of any other part of the general topic of abortion or miscarriage. The impossibility of ascertaining the number of abortions occurring in any large community had been generally recognized, so that the conclusions based upon figures given as to the proportional ratio of the number of deliveries of non-viable children compared with labors after the seventh month were unreliable. It was his belief, also, that the mortality following abortion or miscarriage could not at present be arrived at even to an approximative degree. The desire to conceal the cause of death, either because of the illegitimacy of the pregnancy, or because of criminal interference, or because of the known tendency of the gossiping to ascribe all such deliveries, especially if fatal, to criminal interference, led to the writing of misleading certificates. Some of the deaths ascribed to septicæmia, or pyæmia, or typhoid fever, etc., were deaths following abortions or miscarriages. Treatment must be based, however, not only upon the actual risk of a fatal result to the mother, but also upon a full appreciation of the fact that improperly managed deliveries of non-viable offspring entailed upon the woman a number of serious conditions. Subinvolution of the uterus and of all the structures functionally associated or closely related by position was of frequent occurrence. Septic endometritis with septic endosalpingitis, oophoritis, and localized peritonitis, adhesions, crippled ovaries, imprisoned, it might be, in lymph deposits, fixed and occluded tubes, a permanently damaged endometrium, acute uterine flexions and prolapse, and septic blood infection with impaired nutrition and nerve exhaustion—such, in addition to a fatal termination, were some of the results to be guarded against by judicious treatment. Again, many cases of acquired sterility were traceable to abortions or miscarriages, and extra-uterine pregnancy, known now to be of greater frequency than was formerly supposed, might be doubtless in many instances traceable to tubes damaged by abortions. He, then, who based his treatment upon only the desire to save his patient from death had not grasped the full indications of his case. To prevent death from hæmorrhage and from intense blood-poisoning was certainly his duty, but not his whole duty. His whole duty rested upon the indication of restoring the woman to the conditions of health, both locally and generally, so that the various structures, especially of the pelvis, might be uninjured, and the various functions, especially of the sexual and related organs, be performed with physiological ease and safety. Delivery during the early weeks of pregnancy was attended with a minimum of risk to life, yet subinvolution, often with endometritis and endosalpingitis, frequently followed such an abortion. About the third month began the actual danger of death from hæmorrhage and septicæmia, and this danger increased as the period of pregnancy at which delivery occurred advanced, up to the time when viability of the child began and

the phenomena were more or less those of labor at full term. It should be borne in mind that crippling of the functional sexual capacity of the woman was apt to result, whatever the period of non-viable delivery.

The treatment of such a delivery was divisible into the expectant and the active plans. The chief difference between the two consisted, on the one hand, in securing the emptying of the uterus artificially, if nature did not effect it promptly, while, on the other hand, such interference was strictly avoided, at least until symptoms indicated danger to the patient. During the early weeks, when there was practically no danger of loss of life, the plan of non-interference was not departed from by its advocates, and was adopted by not a few of those who resorted to the more active treatment in the more advanced deliveries. In early abortions, say prior to the end of the second month, in addition to advising rest for eight or ten days in bed or on the lounge, he had practiced during late years antiseptic cleansing of the uterine cavity by means of one injection of a corrosive sublimate solution (1 to 4,000); after the escape of the ovum he resorted to only one injection, and always used a return-tube catheter. He had not thought it necessary to resort to the curette prior to the second month except when by reason of instrumental interference septic infection was especially to be feared. During the third month, in addition to the antiseptic intra-uterine injection, he used a smooth wire curette, preferably immediately after the escape of the ovum, resorting at the same time to the injection. It was during and after the third month that dangerous hæmorrhage might arise. If the patient was confined to the recumbent posture, danger from this source, however, rarely occurred. If the bleeding appeared, however, before the os was sufficiently dilated to admit of emptying the uterus, he tamponed both the cervical canal and the upper part of the vagina. For this purpose he preferred strips of baked cloth, because of the ease of their introduction and removal. Antiseptic syringing was resorted to both before the introduction and after the removal of the tampons. The tampon should not be employed as a routine treatment. Hæmorrhage that was not controlled by the postural treatment and by cold applications was the only indication for the tampon. After the os was dilated the best way of treating the hæmorrhage was to empty the uterus and to inject hot aseptic water into its cavity. In the absence of serious hæmorrhage, the rule to avoid rupturing the membranes should be adhered to rigidly, inasmuch as an unbroken ovum tended to prevent or to check hæmorrhage. If the membranes had been broken, the embryo or fœtus usually escaped, while the placenta and membranes remained within the uterus and were probably adherent to it. If the embryo or fœtus had escaped, the placenta and membranes would usually be expelled within twenty-four hours, yet in a large proportion of cases they would remain within the uterus for days, weeks, or months. The continuance of the placenta within the uterus for even a few days at a non-viable period of pregnancy brought danger to the patient. Such danger was a very considerable one to life from both hæmorrhage and septic infection. And, even should the patient escape with her life, he did not believe that any one ever escaped without serious injury to the child-bearing apparatus. Under such circumstances arose conditions which were likely to produce sterility or to cause subsequent abortions.

Septic changes of the products of conception under such favorable conditions of warmth, moisture, and contact of atmospheric air were developed so rapidly that, although absorption was probably not so rapid as at or near the full period of gestation, no one could say how soon the process of septic infection began. The incipency of such blood-poisoning was not her-

alded by any definite symptom. Even the rise of temperature, as shown by the thermometer, was not fully reliable unless observed every hour or two, and to wait until hæmorrhage, or a rapid pulse, or a chill, or decidedly high temperature supervened would prove, in not a few instances, to be waiting until a fatal result was inevitable. Or, should the uterus have emptied itself within a few days without evidence of danger of death, still in the great majority of such cases he believed that grave and perhaps permanent local damage would have resulted. We were told to let the placenta remain until there were evidences of danger, and then to remove it. Wherein was benefit to be derived from such a rule of practice? Was it not wiser to take due precautions against fire than passively to await the development of flames within the building? An abortion or a miscarriage was a non-physiological accident; it was unnatural and pathological. There was no weight, then, in the argument that artificial removal of the placenta was unnatural and unphysiological and hence should not be resorted to. Its retention brought to the woman her greatest danger, both as to life and as to future usefulness. A uterus promptly and rightly emptied, uninjured by traumatism, and rendered aseptic, became a source of comparatively little, if any, danger.

As in labor after the child had become viable, so in abortions or miscarriages, ergot was of great service after the uterus was empty. It then encouraged involution, checked excessive lochial flow, expelled clots, and lessened septic absorption. Before the uterus was empty this drug was seldom of more than limited value, and often was productive of actual harm. When the hæmorrhage was considerable and the ovum was intact, its administration would aid in controlling the loss of blood, but even here the tampon was usually sufficient. He believed that he had repeatedly seen the use of ergot retard the completion of the delivery by causing an undilatable condition of the cervix. Such belief had been strengthened by finding that under such circumstances the administration of an opiate hastened the delivery by relaxing a cervix that had been rendered rigid by ergot. In incomplete miscarriage there was nothing more uncertain than the action of ergot. After its use the uterus might not empty itself for days or weeks, while the cervix closed so as not only to prevent the escape of the placenta, but also to prevent easy artificial extraction. If it was decided to empty the uterus, what was the best method of doing so? Prior to the third month the small size of the cervical canal rendered the introduction of the finger difficult, and the curette was here sufficiently efficient, either before or after the escape of the ovum. The thickened decidua could then be readily removed with this instrument. After the third month there was chiefly the placenta to deal with, and here the finger was safer, more efficient, and more reliable than any curette. The finger more thoroughly and more certainly removed all the products of conception, and told the presence or absence of such complications as polypi, fibromata, etc. When reliance was placed solely on the curette, the uterus might be supposed to be empty when it was not; fragments of placenta and of membrane, or even the entire placenta, might be left; with extreme risk to the patient. If one was present at the time of the escape of the embryo, and the placenta remained, he should at once, while the os was dilated, introduce his finger into the uterus, and, while depressing and steadying the uterus with the other hand over the abdominal wall, dissect off the secundines *en masse* and completely and remove them. To effect this it might be necessary to give an anæsthetic. After the uterus was emptied it should at once be syringed with a hot corrosive-sublimate solution. There would be, in all probability, no indication for a repetition of the intra-uterine injection, though daily intra-vaginal antiseptic syringing for eight or ten days had been his

practice. If the case was not seen until several hours had elapsed, and the placenta was still within the uterus and ergot had not been administered, the os would be sufficiently dilatable to admit of an immediate resort to prompt treatment. If at that time the cervix had already contracted because of ergot, the suspension of the ergot and the administration of an opiate, with non-interference for a few hours, would secure a dilatation of the os to such an extent as to permit of emptying of the uterus with the finger. If a number of days or weeks or months had elapsed, and the symptoms indicated an incomplete emptying of the uterus, and the cervical canal was closely contracted, it would be better to dilate either with laminaria tents or with graduated bougies, and to introduce the finger, than to rely upon any form of curette. After grave septic poisoning had occurred, a cervical canal that had previously been contracted underwent relaxation, and the placenta became detached or was so loosely adherent that its removal with the finger was usually a very simple procedure, and was, according to even the expectant practitioner, urgently demanded; but, immediately following removal of the placenta under such circumstances, evidences of more intense poisoning were frequently observed, and in many such cases a fatal termination took place.

There was but one form of curette that should ever be used for the removal of any of the products of conception. The perfectly dull wire curette was the only safe one. Every form of the sharp-edged instrument should be absolutely avoided. Simon's scoop was a dangerous instrument in the hands of the most careful. Much of the opposition to the curette was based upon the use of that or some other cutting instrument. Even with the dull wire due caution must be used not to injure the uterus. A softened womb might be penetrated even by a dull instrument. The author's preference for the finger over the curette was based, however, rather upon the uncertainty as to the efficient working of the dull curette than upon its dangers. It would seem scarcely necessary to caution any one not to mistake the somewhat elevated and roughened placental site for portions of the placenta itself; but in one instance he had seen such a mistake made by an inexperienced gentleman, who made active efforts with Simon's scoop until the uterine tissue was extensively gouged into by that dangerous instrument. Experienced men had left large masses of placenta—in fact, the fetus and its placenta both—in *utero* after the cavity had been curetted. The possibility of double pregnancy with separate placentæ must not be lost sight of. He had seen an instance in which the physician removed with his finger, under anæsthesia, one fetus with its secundines, and left within the uterus unrecognized a second fetus and its placenta until uterine contraction secured their expulsion.

The various complications of non-viable deliveries were numerous and might call for special additional measures, but the management of the delivery rested upon no peculiar principle. Criminal abortion brought with it greater dangers, but usually the management did not differ materially from that of non-criminal delivery. In the criminal variety septic infection might occur before the abortion or miscarriage had begun, and the expectant plan of treatment was attended with the greatest dangers. An injudicious introduction of the sound might engender a septic inflammation of the endometrium and lead to a fatal result before any part of the ovum was expelled. Under such circumstances non-interference contributed to death. In inevitable abortion he had repeatedly emptied the uterus by compressing the body between two or three fingers within the vagina and in front of the uterus and the other hand over the abdomen. He had also in a few instances secured a prompt ending of an incomplete abortion or miscarriage by the injection

of hot water into the uterine cavity, of course securing its ready outflow. The hot injection awakened active corporeal contractions with cervical relaxation, and, if the fluid was antiseptic, diminished the danger of infection.

Dr. WILLIAM GOODELL took exception to but one point in the paper, and that was as to the use of the dull curette. He had given up the use of the dull curette for several reasons. There was great danger of wounding the endometrium in its soft, thickened, and vulnerable state. Then there was this very danger the author had mentioned, of mistaking the placental site for tissue that should be removed, and the further danger, which he had also admitted, of perforation. The speaker was sure that he had once penetrated the wall of the uterus with a sound, and without using any force—though, fortunately, without any evil result. There was danger of wounding that portion of the uterine wall which was not at all implicated, if he might so express it; and especially, two or three days after the abortion, would this cause a liability to the creation of a fresh raw surface upon perfectly healthy tissue, with additional danger of infection. He used two styles of forceps: one a small catch-forceps, which would seize anything that projected, or, still better, a small fenestrated polypus-forceps, which could grasp any projecting mass, however small, and that only.

Dr. REGAR asked how it could be told that the uterus was completely cleaned out. The finger could not always determine with certainty. How long was one to keep up examinations and attempts at cleansing?

Dr. J. B. WALKER was inclined to answer the preceding speaker by saying that as long as the os was patulous the uterus contained something that needed removal; after its removal contraction would occur. That had been his experience in several cases. He would ask Dr. Parish whether the rule held good in all cases.

Dr. H. A. SLOCUM rather feared to follow the advice given to permit the ovum to escape entire. He remembered two cases, which fortunately had terminated favorably, but which had given him much anxiety, in which the escape of the ovum entire had been followed by alarming hæmorrhage. One of these was in a well developed florid woman who had a history of repeated miscarriages. When he was summoned she was bleeding slightly, and the labor-pains were strong and constant. With his finger in the vagina he waited for the ovum to be expelled entire. It came with a gush of blood that blanched the ruddy face of the patient and left her pulseless. He was compelled to remove the pillows, elevate the foot of the bed, and with finger and hand endeavor to excite uterine contractions, after which, with hot-water injections and other appropriate measures, the bleeding was controlled. When a uterus was distended with its contents, and the placenta left its site, and the large mass was suddenly expelled, it seemed to him that the sinuses would be left wide open, and the contractile vigor of the uterus would not suffice to close them. He concurred in the advice to remove the placenta as soon as possible. He remembered a case, however, in the practice of a distinguished practitioner, in which, for what reason he did not know, it was left for six weeks free in the cavity, becoming hard and leathery, and was then removed under anæsthesia. His only connection with the case had been to give ether, so that he knew nothing further of the circumstances than that the placenta remained for six weeks without giving rise to any bad symptoms.

Dr. W. E. ASHTON would take exception to the author's low estimate of the value of ergot. While he conceded that it was contra-indicated, except with a tampon, yet, if the tampon was introduced and ergot then administered, the effect would be much more prompt and sure, and the presence of the tampon would prevent anything like hour-glass contraction. After a

complete abortion he would consider intra-uterine antiseptic irrigation uncalled for, and rather dangerous as tending to introduce air, and therefore germs, into a uterus which was otherwise in an aseptic condition.

Dr. PARISH said that, in reference to the use of the dull wire curette, Dr. Goodell could not have heard his remarks, or he must have failed to express himself clearly. He did not use it except at one stage: that was the third month, never after the placenta had been formed. He preferred the finger for many reasons, as he had stated. Even with the dull instrument there was some risk of injury, and the method was unreliable. Before the differentiation of the placenta, however, the smooth wire curette would detach and remove the deciduous membrane with no danger. He had used forceps, though not exactly of the same form as had been spoken of, but the objection was that one could not be sure with any form of instrument whatever that the uterus was empty. The finger alone would tell that. It was not only a therapeutic but a diagnostic appliance. It must be very rare for the uterus to possess the power to expel the ovum unaided, and then fail to take care of itself. There must be some special morbid condition to which the hæmorrhage was due. In the case narrated by Dr. Slocum, with its history of frequent miscarriages, he would have suspected a polypus. He did combine the use of ergot with that of the tampon, should the latter be insufficient when the ovum was intact, especially if the ovum was intact, to give a smooth mass for the uterus to contract on. Antiseptic injections were indicated after such a pathological process as a miscarriage. He doubted if the uterine cavity usually closed air-tight after such a process. Not infrequently there was a separation of the uterine from the foetal layer of the placenta, with adhesion of the uterine portion. This adherent maternal layer was apt to give rise to septic inflammation and general infection. The patulous condition of the cervix was, to some extent, an evidence that the uterus was not empty, but the reverse did not hold good. It would be unsafe to conclude that everything had been expelled because the os was found contracted.

NEW YORK ACADEMY OF MEDICINE.

Meeting of April 5, 1888.

The President, Dr. A. JACOBI, in the Chair.

A Contribution to the Diagnosis and Surgery of Cerebral Tumors was presented by Dr. E. C. SEGUIN and Dr. R. F. WEIR, in the first part of which they related a case. The patient was a German, a resident of Bridgeport, under the care of his family physician, Dr. Godfrey, who first brought him to Dr. Seguin's on August 12, 1887. In Dr. Seguin's absence an examination was made by Dr. Booth. The patient was a strong, healthy-looking man, with no history of syphilis, and no history of epilepsy in childhood. The family history was supposed to be good, but it had afterward been learned that the mother had died of cancer, probably scirrhus, of the liver. The patient had been healthy until 1882, when he had malarial fever. During this illness he had a good deal of pain in the head, and one day, when feeling strangely, he got up to go to the window, when his wife observed spasm of the right cheek and neck. Consciousness was not lost. One or two similar attacks occurred before 1885. These spasms in the face and neck on the right side were the only symptoms of cerebral disease for three years. In 1885 the symptoms became more marked. One day during that year he fell unconscious and bit his tongue. He had similar attacks at long intervals afterward. These epileptic attacks were preceded by an aura, which was followed by twitching and jerking in the right hand and arm and the right side of the

face, and loss of consciousness. No exciting cause had been observed. The memory was not so good as formerly; the speech had become thick. Dr. Seguin saw the patient for the first time on August 26th; he had had no purely motor attack in the hand alone; it had always been affected after the right cheek. There was no history of injury to the head. The patient was awkward with the right hand; the arm and hand were the seat of a numb, heavy sensation. The left side and lower extremities were not affected. At this time the tongue did not deviate, but at a later examination it deviated a trifle to the right. The patient was seen and examined on September 21st and October 19th, when his symptoms were found to be rapidly progressing, and an operation was advised. The diagnosis was that of a tumor in the left motor zone, in the facial center. There was slight diminution of the tactile sense in the right cheek and arm. There was slight impairment of the muscular sense in the right hand. There was constant loss of saliva from the right buccal angle. The strength of the right hand and arm was about two thirds that of the left. Subsequently tenderness developed over the motor zone of the left hemisphere. The temperature test over the scalp was negative. Whether the tumor was cortical or subcortical was not determined. Treatment by iodide of potassium had no effect. Dr. R. F. Weir performed the operation in the New York Hospital, November 17, 1887. The head was shaved the previous day, and great pains were taken to make the operation perfectly antiseptic. The spray was not used. A minute perforation was made through the scalp and the point marked with a lead-pencil which was to be the center for the trephine. Two pieces were then removed with the trephine, and the openings being joined, left one large opening two by three inches. The dura mater bulged only a little, and appeared normal. When it was cut the brain bulged somewhat into the opening, but its surface was normal. The finger recognized no tumor until firm pressure was made, when deep resistance was felt in a mass of small size under the suspected convolution. It was of the shape and of about the size of the end of the forefinger, or of an almond. It was readily lifted out by a Volkmann's spoon, blunted for this purpose. A little portion of brain, of about the size of a pea, was removed with it. The finger passed in an inch and a half to the bottom of the wound. There was no hæmorrhage from the brain itself. A rubber drainage-tube was carried to the bottom of the cavity and out through the posterior margin of the wound; the dura mater was stitched together except where the tube emerged. After the final dressing the wound was washed with corrosive-sublimate solution (1 to 5,000). The discs of bone were replaced. At the close of the operation the pulse was 125, and the general condition was good. Dr. Peabody pronounced the tumor an infiltrating sarcoma.

Commenting on the operation, Dr. WEIR said he thought there had been more hæmorrhage from the vessels of the scalp than he would allow at a future operation. The patient had gone to his home a month after the operation.

Dr. SEGUIN gave the history of the case from the time of the operation until about the 1st of April. There was almost complete hemiplegia with aphasia just after the operation, but these subsided, leaving the man in about his previous condition. He had no convulsion until the 18th of December. Driveling had ceased. After his return to Bridgeport he again contracted a form of intermittent fever, and the symptoms due to the cerebral lesion were most pronounced when he had the fever. There was jaundice with the malarial symptoms. The wife had observed no twitching in the muscles of the face since his return home after the operation. He stated that he knew the word he wished to use, but could not utter it. The right hand no longer felt numb. The muscular sense was practically per-

fect, and sensation seemed normal in the right hand. Dr. Seguin thought life had been prolonged by the operation. The paresis seemed to be somewhat greater, but he attributed this to the patient's general health. The sensibility of the face, hands, and fingers was improved. The aphasia was about the same as before the operation. There was no indication of increased intracranial pressure and no evidence of a relapse of the disease. The speaker was not positive that the tumor had been entirely subcortical. It might have involved to some extent a deep gyrus located in its neighborhood. The case was particularly interesting when considered with reference to recent advances in the physiology of the brain and the application of such knowledge to surgical interference in a general way as well as with regard to tumors. The diagnosis of tumor of the brain for the guidance of the surgeon was, as a rule, reached gradually. Then the locality of the tumor would be determined by empirically acquired knowledge due to the studies of Broca and others, and the laws of cerebral action as elicited by Hitzig and others. The speaker here considered the signs of a tumor in the motor and sensory zones, the symptoms due to irritation or excitation of the part as distinguished from those due to its destruction, etc. Speaking of the significance of limited spasm or paresis, he had long looked upon the early spasm as a guide to correct localization of the disease. It was of so great importance that it should always be traced if possible. He would call it the signal symptom of cerebral tumor. The diagnosis of a tumor situated in the sensory zone for sight, he thought, could be made just as positively as if it were located in the motor center for the hand, face, or leg. It was of importance to determine not alone the region in which the tumor was located, but also, if possible, whether it was cortical or subcortical. He thought that at present we were unable to distinguish a cortical from a subcortical tumor by the symptoms. Regarding the significance of headache, his conclusion had been negative. Indeed, headache was an unreliable symptom of tumor of the brain independent of location. His conclusion with regard to the significance of scalp temperature had also been negative. The surgeon would be influenced as to whether he should or should not operate by the question of the probability of the tumor being multiple. The presence of tuberculosis or of cancer in other parts of the body would contra-indicate an operation. Combined symptoms of tumor in the motor and sensory zones, or different zones, whether sensory or motor, would point to multiple tumor. Where more than one growth existed in a limited area of the brain, it could not be determined during life; the surgeon might remove one and overlook the other.

Dr. WEIR then considered the surgery of cerebral tumors, and read a portion of his paper, giving a synopsis of the operations performed by Bennet, Godlee, Victor Horsley, and others. From the facts presented it would seem that an exploratory operation would be justified when symptoms pointed to progressive brain pressure, whether from tumor, abscess, or an intracerebral or extracerebral blood-clot, or to continuous irritation.

Dr. KEEN, of Philadelphia, related briefly the history of a case which he would at a future time publish in detail—that of a patient, aged twenty years, who had sustained a fall when three years of age, which had left a scar over the left motor region. It was not until some months before the speaker saw him that he had begun to have epilepsy and paralysis of the right leg, the right arm, and the face, and had aphasia. He removed a large tumor from the left motor zone, symptoms of pressure developed afterward, and he had to change the dressing and remove a large blood-clot. Hernia cerebri then developed and gave considerable trouble, but the patient recovered.

In this case the blood-vessels were very brittle, and he had had much difficulty in controlling hæmorrhage. He employed for this purpose hot water, ligatures, and pressure. He thought the entire scalp should be shaved, to reveal any possible scars to which attention had not been drawn.

ALUMNÆ ASSOCIATION OF THE WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY.

Meeting of May 29, 1888.

The President, Dr. MARY T. BISSELL, in the Chair;
Dr. SARAH E. POST, Secretary.

Acute Articular Rheumatism complicating the Puerperal State.—Dr. GERTRUDE B. KELLY presented the history of a case. The patient was a multipara, and the case one of breech presentation. The membranes ruptured prematurely at 11 A. M. Dilatation was completed and the breech born at 8.45 P. M. Contractions then ceased, and the head was expelled by expression. The child was born alive, but did not cry for an hour, and died at the end of twenty-seven hours. The uterus contracted well, but an hour after labor the pulse was 100, and the patient felt chilly and her face was flushed. On the morning of the second day the temperature was 100.8° F., and the pulse 100. The patient complained of pain in the right hypochondrium and of epigastric distress. In the evening the temperature was 102.8° and the pulse 104. The face was then of a bluish tint, almost apoplectic in appearance. The pain and feeling of weight in the epigastrium continued, and a dose of calomel was given. There was no pelvic tenderness and the flow was normal. On the morning of the third day the temperature was 100.8°. The tongue was dry and brown, and there was a decidedly yellow tinge to the skin, but the patient felt better. On the morning of the fourth day the temperature was 101.4° and the pulse 88. In the evening the temperature was 103° and the pulse 88. Still there was no tenderness about the uterus and the flow was normal. Pain in the pubic symphysis and in the right elbow now began to be complained of. On the morning of the fifth day the temperature was 101.4°, and there was swelling of the right wrist. The patient was ordered ten grains of sodium salicylate every two hours, but only two doses were taken, because the patient thought that "it stopped the flow." In the evening the temperature was 99.8°, perspiration was profuse, and there was not so much pain, but the patient was restless. After taking a drachm of tincture of hyoscyamus she was delirious. She had previously taken this dose with good effect. On the morning of the sixth day she was rational and was taking nourishment well. The temperature was 101.4°. There was now swelling of the left elbow and wrist, but the pain was less. After a fairly comfortable day, at 3.45 P. M. she began to talk incoherently, and died shortly afterward. Embolism was considered to be the cause of death. No signs of heart implication had been discovered previously. An autopsy was not allowed.

Dr. ELIZABETH CUSHIER rather favored the diagnosis of obscure blood-poisoning in this case. She had seen cases terminate fatally without local pelvic symptoms and without the autopsy revealing any pelvic lesions, with the exception of small collections of pus in the lymph-reservoirs situated on the sides of the uterus beneath the broad ligaments. In one case which she had seen there had been scarcely a trace of peritonitis, and the only changes besides the lymphangitis referred to were a softening of the liver and spleen and the dark and semi-coagulable condition of the blood. There was absence of local pelvic symptoms also in some cases where the patient, after having done apparently well for a few days, would have a violent chill

and high fever, lasting, with more or less marked remissions, for a number of days, then passing off, and the patient making a rapid and complete recovery. In two such cases seen by the speaker there had been complete absence of local symptoms, and the diagnosis of sepsis could only be made by rigid exclusion. In one such case the temperature had risen to 107° , and there had been furious delirium. This temperature had been controlled by cold applications, and there had been no further elevation. The joint affection in the case presented by Dr. Kelly, if taken in connection with the delirium, would point to septic rather than rheumatic arthritis, as the cerebral symptoms of acute rheumatism were usually attended or preceded by excessive fever, while in septic poisoning, on the contrary, hyperpyrexia did not necessarily accompany such disturbances.

Dr. EMMA WARD EDWARDS thought that the implication of the joints had been too early to be referred to puerperal infection. The joints had been affected upon the fourth day, while the fever had been immediate.

Dr. CUSHIER replied that the poison might have gained access before the child's birth, and in that way have gained time for its work.

Dr. SARAH E. POST suggested that pyosalpinx would furnish such a focus of infective material. Obstetricians were looking toward these tubal collections for the origin of obscure cases of puerperal disease. In this case the head had been expressed. If a tubal collection had existed, it might at the same time have been emptied, and its contents, passing over the placental surface of the uterus before contraction, have been taken directly into the blood. Under such circumstances the immediate chill and rise of temperature would be easily explained. Puerperal infection usually proceeded by the lymphatics. Where the blood-current was the channel for its introduction an altered type of development and a speedier systemic involvement would be inferred.

Dr. VIRGINIA DAVIS referred to three cases of joint affection occurring during the puerperal period. In one case the attack had occurred three weeks after delivery, in another two weeks and a half, and in the other four weeks. The history had been irregular and the attacks had not been promptly limited by anti-rheumatic treatment, yet the patients had been up and about previous to the attack, there had been no pain, nor rise of temperature, nor any local pelvic symptoms. A diagnosis of septic infection had been made in all of these cases, but the question of rheumatism was, she thought, pertinent. In one of the cases a previous history of rheumatism had been obtained.

Dr. KELLY still held to the opinion that the rise of temperature and the joint affection had occurred too early for puerperal pyæmia. In all of the cases which had been referred to a longer interval had elapsed between the delivery and the development of these symptoms.

The Frequency of Backward Displacements of the Uterus after Parturition.—Dr. EMMA WARD EDWARDS read a paper on this subject. In her earlier practice she had encouraged patients wearing pessaries for backward displacements to hope that after pregnancy they would be cured. She had, however, been disappointed, having found that in all cases the old malposition was renewed. In this statement she included both flexions and versions. In the reader's experience all backward displacements of the uterus tended to return after delivery. The curability of the condition was increased, however. If the uterus was supported by tampons or a pessary during the first two or three months after delivery, a permanent cure would usually result. The theory of cure lay in a shortening of the ligaments by the processes of involution. Backward displacements in the virgin and in the sterile married woman were, on the other hand, practically incurable by pessaries. The

future of Alexander's operation was therefore eagerly to be watched. It could not be denied that shortening of the round ligaments was the most important indication to be met in the treatment of these cases.

Dr. GRACE PECKHAM referred to a case in which delivery at term had been preceded by five miscarriages, due probably to the malposition of the uterus. In this case the malposition had returned after delivery. The special cause for the displacement would in any case probably determine its recurrence.

Dr. POST referred to two cases in which posterior displacement had seemed to prevent conception, and in which pregnancy had occurred while the patients were wearing a pessary. In both cases the displacement had returned.

Dr. CUSHIER was sorry to say that she had had a large experience similar to that of which Dr. Edwards had complained. She knew of no case in which backward displacement existing previous to pregnancy had not returned. In regard to early treatment, she thought that, while careful attention should be paid to the replacing of the uterus as soon after parturition as the displacement was discovered, equal care should be taken that the involution of the vagina was not interfered with by large pessaries. The frequent lifting of the uterus, the Sims posture, or a well-adjusted Cutter's pessary would, she thought, prove most efficient. Subsequently an intravaginal pessary could be resorted to. The speaker did not think that backward displacements of the uterus were a frequent cause of sterility, for, while she had corrected the displacement in many cases in which it had given rise to repeated abortions, she had yet to see a case of simple retroversion with sterility which was overcome by the replacement of the uterus. In regard to shortening of the round ligaments, her experience had been too limited to be of value. She had operated six times. In three cases the result had been satisfactory; in one a subsequent operation upon the vagina had been resorted to, as the shortening of the ligaments had not prevented the sinking of the uterus; in another the patient had been obliged to continue the wearing of her pessary. In one case the operation had been done subsequent to a Battey's operation. The round ligaments were found in this case so attenuated as not to bear traction, and relief was given by drawing the cervix backward and attaching its posterior lip to the posterior vaginal wall. Even where pessaries were worn with comfort, Alexander's operation would be welcomed as an escape from the doom of wearing them, as was in some cases necessary, for a lifetime.

The Frequency of Nephritis as a Complication of Intestinal Catarrh was made the subject of remarks by Dr. SARAH J. McNUTT. Where stupor or other head symptoms developed in the course of intestinal catarrh, the urine, she said, should be watched carefully. Scanty urine would often be found loaded with albumin and casts.

Tumor of the Clitoris.—Dr. PECKHAM presented a photograph showing the restoration of the parts in a case in which she had operated a year before.

Book Notices.

Atlas of Venereal and Skin Diseases: Comprising Original Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New

York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. With Original Text by PRINCE A. MORROW, A. M., M. D., etc. Fasciculi i, ii, iii, iv, and v. New York: William Wood & Co., 1888.

No amount of skill in description will enable a writer on skin diseases to give his readers such a working knowledge of the appearances assumed by those affections as will fit him to diagnose them, except the commoner ones, with any approach to certainty. Not that didactic instruction in dermatology is valueless—indeed, it is of the highest importance—but in the particular that we have mentioned it is a necessity that it should be supplemented by something that appeals directly to the senses. The manifestations of cutaneous disease ought to be seen upon actual patients over and over again by every student or practitioner who expects to qualify himself for practice in this department; and not only seen, but felt of and examined in every available way. But this means of acquiring expertness in distinguishing between their many forms is not open to every student in this country, and museums containing collections of casts are still less accessible to him. These resources failing, it is absolutely necessary that good pictorial representations should be supplied, and it is fortunate that so many excellent colored plates are now to be had. Among them, the series prepared under Dr. Morrow's direction, together with the descriptive text supplied by him, is one of the most praiseworthy. He has shown wisdom, we think, in choosing representative plates from those already published, instead of yielding to the natural ambition to produce a collection wholly original; for it rarely if ever happens that one man's observation in this field is extensive enough to include the whole range of the cases most useful for teaching purposes. The eminence of Dr. Morrow's collaborators is a guarantee that the material supplied to him is to be of the best, and the guarantee is well borne out by those parts of the work that have thus far come to our notice; moreover, his editorial experience furnishes an equally positive assurance that it will be judiciously handled. So far as the first five parts go, we can only say that the colored plates and the woodcuts are well done, and that the text presents in a condensed form an epitome of our present knowledge of cutaneous and venereal diseases.

A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners. Second Edition, thoroughly revised and enlarged. By JAMES NEVINS HYDE, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago, etc. Philadelphia: Lea Brothers & Co., 1888. Pp. xix-17 to 676. [Price, \$4.50.]

WE congratulate the author of this book, not alone because a second edition has been called for, but also because of the great improvement of this edition upon the first. Every page shows evidence of careful pruning, and the literary style of the book has been much improved. Nearly a hundred pages of new matter have been added, and the general arrangement of the work is much superior to that of the old edition. The author has adopted a classification different from that which he used before, and this has made an entirely new order in the position of the chapters necessary. No fewer than twenty-two more diseases are described in this than in the previous edition, and five of the old chapters have been so enlarged and improved as to be practically new. There are fifteen new illustrations in the book, and the literature of the subject has been brought down to the year 1886, with one or two references to 1887. In fact, this edition is practically a new book, and is in every way worthy of its author.

We would note that in this edition matters of diet are given proper prominence, both as aetiological factors and as therapeutical means; that the newer drugs are mentioned, and new preparations fully described; that the use of electrolysis is commended in a number of diseases besides hirsuties; that considerable care has been given to nomenclature and definitions; and that the chapter on the scrofulodermata is, in our judgment, the best presentation of the subject to be found anywhere.

We commend the book, and are confident that it will be found useful to all who read it.

Photographic Illustrations of Skin Diseases. An Atlas and Text-book combined. By GEORGE HENRY FOX, A. M., M. D., etc. Hand-colored Plates. Second Series, complete in Twelve Parts. New York: E. B. Treat, 1888.

THE first, second, third, and fourth parts of this series have reached us. The large sale of the first series, published several years ago, made the author widely known for his discrimination in the selection of cases to be shown pictorially and for the excellence of the photographic work done under his direction. He has had very great clinical resources to draw upon, and has certainly succeeded in making a remarkably life-like and instructive collection. Many of his photographs bring out the texture of the diseased skin so forcibly that the student can almost afford to dispense with the diagnostic aid to be derived from palpation. The various skin diseases differ materially in their susceptibility to adequate photographic representation. Bearing this fact in mind, it may be said that Dr. Fox's present series of portraits is exceedingly well calculated to convey impressions that will prove of excellent service to the student and practitioner. The text that accompanies them, too, is of a character to minister directly to the same end. The work well deserves an extensive circulation.

A Guide to the Practical Examination of Urine. For the Use of Physicians and Students. By JAMES TYSON, M. D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania, etc. Sixth Edition. Revised and corrected. With a Colored Plate and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii-13 to 253. [Price, \$1.50.]

THE most important change in the present edition is the substitution of new matter in the place of a portion of the old. The new portion is mainly in smaller type than the body of the work, and so closely fills the space left by the omitted text that the book has not materially changed its size or appearance, while it has been made to keep abreast of the times. We believe it will continue to hold its high rank among works of its class, and still be the reliance of the student and of the practitioner.

A Manual of the Operations of Surgery, for the Use of Senior Students, House Surgeons, and Junior Practitioners. Illustrated. By JOSEPH BELL, M. D., F. R. C. S. Edin., Consulting Surgeon to the Royal Infirmary, etc. Sixth Edition, revised and enlarged. Edinburgh: Oliver & Boyd, 1888. Pp. xvi-336. [Price, 6 shillings.]

THE object of this book is to describe as simply as possible the operations a knowledge of which will be most likely to prove useful, and especially those capable of demonstration on the cadaver. They include ligation of arteries, amputations, excisions, trephining, and operations on the eye, nose, lips, jaws, mouth, throat, air-passages, thorax, abdomen, pelvis, tendons, and nerves. Operations regarding which no special instruction can be given are omitted. The methods given are excellent,

precise and clear, and the work will be found valuable in the hands of a practitioner suddenly called upon to operate, as well as to the student in the operating-class.

The Essentials of Medical Chemistry and Urinalysis. By SAMUEL E. WOODY, A. M., M. D., Professor of Chemistry and Public Hygiene, and Clinical Lecturer on Diseases of Children, in the Kentucky School of Medicine. Second Edition, revised and enlarged, with Eighty-five Illustrations. Louisville: John P. Morton & Co., 1888. Pp. 5 to 140. [Price, \$1.25.]

THE object of this work is to present the essential facts of a course of lectures on the subjects of which it treats, so that the student need not wade through more exhaustive text-books. Overworked as students are, they will gladly hail the appearance of such a help, although a more complete knowledge of certain portions of the subject than is here given is necessary for graduation at some of our medical schools.

Memoranda on Poisons. By THOMAS HAWKES TANNER, M. D., F. L. S. Sixth American, from the last London Edition. Revised by HENRY LEFFMANN, M. D. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii-9 to 177.

THIS handy little pocket manual remains of about its original size, although many changes have been made in it. A considerable portion has been rewritten, some of the old material exchanged for new, and modern chemical nomenclature substituted for the old. It contains much valuable information in a very small compass, and is a good book to have at hand in an emergency.

Theine in the Treatment of Neuralgia. Being a Physiological Contribution to the Therapeutics of Pain. By THOMAS J. MAYS, M. D., Professor of Diseases of the Chest in the Philadelphia Polyclinic, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vii-9 to 84. [Price, 50 cents.]

THIS essay contains an account of the author's experiments with theine, an alkaloid which he thinks he has demonstrated to be distinct from caffeine in its physiological action. His account of its analgesic properties is very interesting. Theine has a special affinity for the nerves of sensation, and produces anæsthesia below the seat of injection when injected subcutaneously. It is a very decided adjuvant in the treatment of various forms of neuralgia, myalgia, and rheumatism, and even in assuaging the pain in locomotor ataxia. This subject deserves very careful attention, for, if Dr. Mays's conclusions are correct, a great advance has been made in the treatment of certain forms of chronic pain.

Accidents and Emergencies. A Manual of the Treatment of Surgical and other Injuries in the Absence of a Physician. By CHARLES W. DULLES, M. D., Fellow of the College of Physicians of Philadelphia, and of the Academy of Surgery, etc. Third Edition, revised and enlarged. With New Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii-9 to 123. [Price, 75 cents.]

THE appearance of the third edition of this little work testifies to the appreciative reception it has met with. As its title indicates, it is intended to instruct the laity what to do in emergencies before a physician can arrive. If the directions given are carefully followed, much good will result, and these directions are given so plainly that it seems hardly possible that they can be misunderstood. The author speaks as strongly as any one can of the folly of depending solely on the knowledge to be derived from such a little manual, and urges that in all cases

not easily and quickly relieved a physician should be summoned immediately.

Time-honored methods of treatment are not scrupulously adhered to, but the author has incorporated new ideas; for example, he recommends a hot bath or exposure before a fire in cases of freezing, in direct opposition to the usual practice. This recommendation is based on the results of experiments performed in Russia with frozen dogs.

There are few adverse criticisms which can be made on the work, but it is difficult to understand why dislocations at the shoulder joint should be excluded from the eminently proper doctrine of non-interference with dislocations on the part of the laity, and why the method of reduction by means of the heel in the axilla should be recommended when the evils occasionally resulting from its use are remembered. It is bad enough that this method is, to so great an extent, exclusively practiced by members of the medical profession to the neglect of better ones, but it is worse to advise a layman to use it in the case of any and every patient who may have the misfortune to fall into his hands.

BOOKS AND PAMPHLETS RECEIVED.

Atlas of Venereal and Skin Diseases, comprising Original Illustrations and Selections from Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus viii. New York: William Wood & Company, 1888.

The Transportation of the Disabled, with Special Reference to Conveyance by Human Bearers. By James E. Pilcher, Ph. D., Assistant Surgeon, U. S. Army. [Reprinted from the "Journal of the Military Service Institution."]

Woman's Medical College of the New York Infirmary. Twentieth Annual Catalogue and Announcement, June, 1888.

Catalogue of the Alumni from 1834 to 1889 of the Medical Department of the Tulane University of Louisiana, containing An Introductory Historical Sketch, An Alphabetical List of all Graduates in Medicine, An Alphabetical List of all Graduates in Pharmacy, A Chronological Table of all Professors and Instructors, A Table enumerating Annually all Students and Graduates.

Medical Department of the Tulane University of Louisiana (formerly, 1847-'84, the University of Louisiana). Catalogue for 1887-'88. Circular for 1888-'89. With Notice of the Course in Pharmacy of the Medical Department, and with Announcements of the Law, Collegiate, and Academical Departments of the University.

University of Georgetown. Fortieth Annual Announcement of the Medical Department, Washington, D. C. Session of 1888-'89.

Twentieth Annual Announcement of the Kansas City Medical College (formerly College of Physicians and Surgeons). Session of 1888 and 1889, with Annual Catalogue of 1887-'88.

College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College. Annual Catalogue and Announcement, with an Account of the New Buildings. New York, June, 1888.

Catalogue of the Albany Medical College, Medical Department of Union University. Fifty-seventh Session, 1887-'88, and Announcement for Session 1888-'89.

1888-'89. Forty-eighth Annual Catalogue and Announcement of the Missouri Medical College, Medical Department of the University of the State of Missouri, Section 2.

Royal College of Physicians and Surgeons in Affiliation with Queen's University, Kingston, Canada, and University of Trinity College, Toronto. Calendar, Session 1888-'89.

Sixth Annual Announcement of the Philadelphia Polyclinic and College for Graduates in Medicine. Sessions 1888-'89.

New Inventions, etc.

A SIMPLE AND EFFICIENT FILTER.

By F. A. CASTLE, M. D.

For a long time I have used in my butler's pantry a simple contrivance for filtering water used on the table, which has been so serviceable and, at the same time, so inexpensive that I venture to recommend it. I took an ordinary glass pharmaceutical percolator (A) and packed the outlet with absorbent cotton (B) so tightly that the water could only flow in drops. By means of a piece of copper wire (C) for a bale, it was suspended from a hook on the lower side of one of the pantry shelves, over the shelf of the sink. As often as necessary, water is poured into the percolator, and the water-pitcher is placed under the outlet. Whenever the cotton shows much discoloration (a thing which is easily observed, owing to the percolator being of glass) the maid replaces it with fresh absorbent cotton. It is in all respects the most practical and cheapest filter I know of, and has no machinery to get out of order, no patent right to carry, and the advantage over most filters that the filtering medium is always under observation, so that there is little risk of contamination of the water by accumulations of filth.

55 EAST FIFTY-SECOND STREET, NEW YORK.

Miscellany.

The European Faculties.—The "Lancet" announces the following changes:

Dr. Heymann has taken charge of the physical department of the Berlin Physiological Institute, which had been held by Professor Christiani until his death last year. Dr. L. Jacobson has qualified as Privat Docent in otology.

Dr. S. Stern has qualified as Privat Docent in methods of physical examination at Buda-Pesth.

Dr. Fouriaux has been appointed to the professorship of internal pathology at Clermont, in place of M. Bourgade de la Dardye, deceased.

Dr. Gustav Pommer has been appointed professor in ordinary of pathological anatomy at Innsbruck.

For Professor Hertwig's chair at Jena, which will be vacated by his removal to Berlin, the name of Professor Fürbringer, of Amsterdam, has been brought forward.

The professorship of anatomy at Lille has been declared vacant.

Dr. P. Smolenski has qualified as Privat Docent in hygiene at Moscow.

Don Gerado Jeremias Debasa, professor of surgery at Santiago, has been appointed rector of the university.

Dr. R. Mattei, professor of pathological anatomy at Sienna, has resigned.

Dr. Ludwig Knorr has been appointed extraordinary professor of chemistry at Würzburg.

Precautions in Bathing.—"The bathing season, though not yet advanced," says the "Lancet," "has already been marked by the levy of that fatal tribute which year by year is exacted of the ignorant and the indiscreet. The recent death by drowning of a young man in the public baths at Poplar suggests one cause of accident which is too apt to

be overlooked. The deceased had entered the water soon after partaking of a hearty meal, and the fatal result was attributed to cerebral congestion due to sudden immersion at such a time. What may have been the particular appearances observed after death in this case we have no means of judging, but it may be well to consider shortly some reasons why the practice of bathing soon after meals is justly condemned. Effusion of blood in or upon the brain, when it occurs in such cases as that already referred to, is probably not a primary cause of mischief, but rather a consequence founded on other circulatory and nervous disturbances. It is an evidence of eclampsia, and the physiological basis upon which this is founded consists in that inward diversion of blood toward the alimentary tract which characterizes normal digestion, the other tissues, notably the brain, being at the same time proportionally anæmic, and the action of heart and lungs impeded by a distended stomach. A natural result of cold immersion at this stage is to encourage or induce a tendency to syncope, to concentrate surface blood still more about the central organs, including the heart, which, especially if at all unequal to its duties, labors ineffectually to readjust the blood-pressure, and finally succumbs with lungs and venous system engorged by passive congestion. It is as if an enemy occupied the outworks of a fortress left for a time unguarded, and forthwith paralyzed the resistance of the citadel. It is best, therefore, to wait for at least an hour and a half or two hours after a good meal before bathing. Another danger to be avoided is that of cramp. This is particularly apt to occur after severe exercise or long immersion. The effect of cold being to prolong the contraction, while exhaustion lowers both the power and the elastic recoil of muscle, it is evident that we have in a combination of these forces all that is required for the production of this dangerous condition. The obvious warning implied in these remarks requires no further admonition to impress the fact that the bather in cold water must be economical of time and free from any appreciable signs of muscular exhaustion."

The Southern Surgical and Gynecological Association will meet in Birmingham, Alabama, on the 11th, 12th, and 13th of September. We learn that the programme includes papers by a large number of the leading surgeons and gynecologists of the South, and that the local committee is taking great pains to make the meeting pleasant and profitable.

The British Medical Association.—According to the programme for the next meeting of the association, to be held in Glasgow, on the 7th, 8th, 9th, and 10th of August, as we learn from the "British Medical Journal," Dr. A. Jacobi, of New York, is to open the discussion on the surgical treatment of diphtheria, in the Section in Diseases of Children.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 29th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 9th corresponded to an annual rate of 16.2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 12.5, and the highest in Manchester, viz., 25 in a thousand. Small-pox caused 6 deaths in Sheffield, 1 in Bristol, and 4 in Preston.

London.—One thousand two hundred and nineteen deaths were registered during the week, including measles, 25; scarlet fever, 23; enteric fever, 8; diphtheria, 22; whooping-cough, 33; diarrhœa and dysentery, 18. The deaths from all causes corresponded to an annual rate of 14.9 in a thousand. Diseases of the respiratory organs caused 185 deaths; different forms of violence, 51; and 8 suicides were registered. In greater London 1,534 deaths were registered, corresponding to an annual rate of 14.5 in a thousand of the population. In the "outer ring" 7 deaths from whooping-cough and 5 from diphtheria were registered.

Ireland.—The average annual death-rate represented by the deaths

registered during the week ending June 9th in the sixteen principal town districts of Ireland was 24.3 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 8.5, and the highest in Lisburn, viz., 43.5 in a thousand. In Dublin 147 deaths were registered, including measles, 1; whooping-cough, 11; enteric fever, 3; scarlet fever, 3; and dysentery, 1.

Straits Settlements.—From the annual medical report of the civil hospitals, it is learned that "in Singapore sporadic cases of cholera occurred in the middle of the year, but a great proportion of the patients were coolies, lately arrived from China, in some of the ports of which country cholera was prevalent at the time. One ship from China—the steamship *Amigo*—was quarantined on account of cholera; her passengers were landed at St. John's Island, and cases of cholera appeared afterward among them. Some other cases occurred also among a number of passengers from China who had been landed at St. John's Island from a ship—the steamship *Bellerophon*—which came in with small-pox on board. Four Europeans died of cholera during the year, two of them having contracted the disease, as far as could be ascertained, on board the steamship *Spaniel*, and the third, a sergeant of police, having become infected at a room in the central police station, where a lot of miscellaneous rubbish and property were kept. A native sergeant was also infected on the same day and died. This room was at once cleared out, the rubbish burnt, and the place disinfected, and no more cases occurred. The fourth case was that of a boy who had recently come from another colony. It is possible that he brought the infection with him. A local outbreak of cholera occurred in the beginning of August in the old lunatic asylum. All the preventive measures we could use failed to stop the disease, and on August 12th all the patients were moved into the new asylum, which was fortunately nearly ready. After the removal, for a day or two, two or three cases occurred, which were promptly removed, and then the disease stopped. Thirty-seven cases of small-pox were reported as occurring during the year. In five of these cases death had occurred before any report was made to the police. Of the remaining thirty-two cases, twenty-five were treated at the small-pox hospital, Balesier Plain, with seven deaths, and the remaining seven—Europeans—were treated at the general hospital. Of the seven cases treated at the general hospital all recovered. In two only of these was infection contracted in Singapore. Of the other five cases, three were landed from ships, and two were children who had just come from Penang, where the disease was prevalent at the time."

Montevideo.—Three hundred and seventy-two deaths were registered during the month of April, including small-pox, 43, and enteric and typhus fevers, 13.

Santiago de Cuba.—The sanitary inspector reports for the week ending June 16th "no small-pox or yellow fever."

Havana.—Nine deaths from yellow fever and 1 from small-pox were registered during the week ending June 22, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow	June 9.	545,678	211	..	..	..	..	..	3	2
Amsterdam	June 9.	389,916	154	..	..	..	..	1	..	..
Munich	June 2.	275,000	159	..	..	..	..	..	2	3
Genoa	June 9.	179,401	77	..	..	..	..	..	..	3
Trieste	May 19.	154,500	85	..	..	..	..	..	..	1
Trieste	May 26.	154,500	69	..	..	3	..	..	3	1
Trieste	June 2.	154,500	73	..	..	..	..	..	..	2
Stuttgart	June 9.	125,510	33	..	..	..	..	..	..	..
Bremen	June 2.	122,000	38	..	..	..	..	..	..	..
Barmen	June 2.	109,000	47	..	..	..	..	..	..	1
Mayence	June 2.	65,802	31	..	..	..	..	..	1	..
Cienfuegos	June 4.	40,753	14	..	..	2	..	..	..	..
Cienfuegos	June 11.	40,753	18	..	..	7	..	..	..	..
Sagua la Grande	June 9.	15,605	24	..	..	..	..	..	..	..
Cartagena, Col'a.	June 9.	13,000	3	..	..	..	..	..	..	..
Matamoros	June 9.	12,000	8	..	..	..	..	..	..	..
S'n Juan d'N'rtc	May 28.	500	1	..	..	..	..	..	..	..

Common Salt in the Treatment of Sick Headache.—Referring to our "Therapeutical Note" on this subject in the issue for June 23d, Dr. Charles Hammer, of Schenectady, N. Y., writes to us that for the

past twenty years he has known that chloride of sodium, in teaspoonful doses, given in a cupful of warm water, at the beginning of the attack, would abort the attack, and that it has done so in numerous instances that have come under his notice.

ANSWERS TO CORRESPONDENTS.

No. 201.—1. By writing to the Surgeon-General of the Navy. 2. A very slight degree of myopia is not a disqualification. 3. Between twenty-one and twenty-six years.

No. 202.—1. A mixture of 6 ounces of light calcined magnesia, 9 ounces of powdered rhubarb, and 1 ounce of powdered ginger, passed through a fine sieve. 2. By precipitating a saturated solution of magnesium sulphate with a strong solution of caustic soda, and washing the precipitate on a filter. 3. To reduce the swelling, etc., of contusions, also to cool a part or to diminish the amount of blood contained in it; usually prepared by mixing alcohol and water, with or without the addition of chloride of ammonium. 4. It had better be acid than alkaline, because it is pleasanter to the taste and keeps better. 5. The evaporation test. The essential oils mentioned are volatile; cottonseed oil is a fixed oil.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

REMARKS ON COCCULUS INDICUS.*

BY MARY PUTNAM JACOBI, M. D.

COCCULUS INDICUS, the fruit of the *Anamirta cocculus*, although said to have been used for a long time for the purpose of stupefying fishes, has been suggested as a medicinal remedy of any importance in only quite recent times. Christison mentioned the drug as useful in the form of an ointment for the cure of lice, but ascribed to it no other virtues. In 1869 Roeber published experiments upon cocculus in the "Archives" of Reichert and Du Bois-Reymond, and in 1875 Planat wrote an elaborate physiological and clinical memoir on the same subject, which received the prize of the French Academy. An essay by J. Crichton Browne was published in the same year in the "British Medical Journal." My attention having been called to the clinical use of picrotoxine, I have performed some experiments with it, which I will first relate and then compare their results with those obtained by others.

To an unmutated frog was administered hypodermically 0.001 gramme, or one sixtieth of a grain, of picrotoxine, the active principle of the cocculus indicus. This was at 4.45; for eight minutes the frog remained perfectly motionless. This period of initial stupor has been observed by Roeber, Planat, and Browne. At 4.53 occurred convulsive extensions of the hind legs. At 5 the frog lay prone, with widely extended legs and arms, and the toes widely separated. There was therefore a general tonic excitation of all the extensors. At 5.02 the legs moved, and then extended stiffly in tetanic cramp, resisting flexion at the knees and ankles, moving all in one piece. At 5.05 there occurred a series of tetanic cramps in the legs and clonic cramps in the arms. The legs were occasionally abducted, but always in one piece. At 5.07 the thighs were flexed on the body and the legs on the thighs, then the legs were violently extended. Immediately afterward the trunk was raised up on the four extremities and on the belly as a fulcrum; then the body bent back in opisthotonos. This convulsion had the co-ordinated character of the convulsion produced in the rabbit by Crichton Browne. In the rabbit, with one twenty-fourth of a grain of picrotoxine clonic spasms of the ears, eyelids, and eyebrows were produced in twenty-two and twenty-three minutes, and in twenty-four minutes the head was drawn slowly and rigidly back, the fore paws were spread out, and the body was then drawn backward and upward with convulsive starts, until the fore paws were raised in the air. At 5.10, to return to my frog, the animal uttered a cry, and the back formed a double curvature, being in lordosis just above the sacrum, and in cyphosis throughout the upper segment. Then the frog rolled over on its back and lay with the legs stiffly extended, but the arms raised at right angles to the body, the forearms again bent and at right angles to the arms, so that the hands became interlocked over the breast.

This peculiar attitude thus resembled, but in an intensified degree, the elevation of the arms observed by Crichton Browne in the rabbit. It is entirely different from the positions assumed in strychnine poisoning. It recalls with vividness the "passional attitude" of the third stage of Charcot's hystero-epilepsy.

* Read before the Section in Materia Medica and Therapeutics of the New York Academy of Medicine, April 27, 1888.

At 5.12 there was a repetition of the convulsions, which continued at intervals during the next half-hour. The frog was then left, and was found dead at eight o'clock.

In a second frog the cerebral and optic lobes were destroyed, the medulla and spinal cord being left intact, then a milligramme of picrotoxine was injected. Immediately afterward the respiratory movements were very slow, and the animal remained motionless for nine minutes. Then asymmetrical movements of the limbs began; one leg was completely flexed, the other leg semi-flexed, then one arm half extended; then the frog turned entirely round. Twelve minutes after the injection the first convulsion occurred, thus five minutes earlier than in the intact frog. But the first convulsion was much more violent; the animal rolled over on its back, held the four limbs vertically in the air, and uttered convulsive screams. The arms, at first projected upward in one piece, were soon flexed at the elbow, so that the forearms crossed the chest horizontally, though held out from it, and the hands interlocked. This position was not assumed by the intact frog until twenty-five minutes after the injection. While it was lying in it the legs began to be alternately flexed and extended, but only one at a time. While the limb was in extension the toes were flexed and extended, with a predominance of extension, so that the interdigital membrane was tense. The respirations at this time were forcible but slow; the movements of the limbs occurred either once a minute or once in two minutes, the frog continuing to remain on the back, with the arms rigid and in the position described. If it was turned over, the position was immediately resumed.

In sixteen minutes the head was raised—i. e., flexed forward. In twenty-four minutes the head was erected and the back curved, the curvature becoming marked in twenty-eight minutes, corresponding to the double curvature observed in the intact frog in twenty-five minutes. During all this time the convulsive movements of the limbs were being repeated in the same manner and at the same interval as already noted. In forty-nine minutes the frog turned over on the belly, in sixty-three minutes lay on the side, with all the limbs and toes extended, and was found an hour later in the same position dead.

In a third frog both the brain and medulla were destroyed, and the same dose of picrotoxine (alcoholic solution) was administered. In four minutes the frog was lying motionless on the belly, the sacrum arched, the four limbs flexed.

In six minutes, pinching of one hind leg caused the frog to leap a little.

In seven minutes, when the left leg had been passively and completely extended, the frog made no attempt to withdraw it.

In eight minutes the respirations were fifty-four, the frog lying prone, with the four limbs extended.

In ten minutes there was no reaction to pinching of the posterior extremities, but the arms were at once withdrawn if pinched.

In fourteen minutes the respirations had been slowed to thirty.

In fifteen minutes there was no reaction to pinching the left arm.

During the next-half hour the frog continued to lie prone, with limbs extended, and with occasional movements of flexion and extension of the hind limbs.

But in this frog, where the medulla as well as the brain was destroyed, there were no distinct convulsive movements, no opisthotonos, no co-ordinated convulsions of the arms, no tonic rigidity of any of the limbs.

All these phenomena were more marked with the frog preserving only the medulla than with the intact frog.

The conclusion would follow that the co-ordinated convulsions, which included a cry and a peculiar attitude, recalling the so-called *passional attitude* in *hystero-epilepsy*, result from the influence of the drug upon the medulla; further, that when the cerebral hemispheres and optic lobes are destroyed the effect of the drug is more marked than when they are intact. This seems to indicate that the irritation of the medulla continues to be inhibited or restrained by the higher centers, which, we should thence infer, were *not* influenced by the poison.

Crichton Browne does not apparently make this distinction, for he says, judging from experiments on rabbits, that the *pirotoxine* has a greater effect on the cerebral than on the spinal centers; but he does not distinguish between the medulla and the cerebrum proper. Roeber, however, experimenting on frogs, found, as I have done in the experiments just related, that the convulsions were not prevented by removing the cerebrum and optic lobes, but never appeared after separation of the medulla. Roeber did not note the interesting fact that the convulsions were less marked when the brain remained than when the medulla, unrestrained by the higher centers, was exposed to the action of the poison. Planat concludes that *pirotoxine* spares the brain and ideomotor regions, and acts principally on the pons, cerebellum, and cord. The experiments just described agree with Roeber's in excluding the cord from any marked influence in the phenomena. Nevertheless, a certain degree of excitation was observed, indicated by tonic extension of the limbs, though without rigidity. This degree of excitation seemed to be confined to the motor regions of the cord, and even to be accompanied by diminution of reflex and sensory excitability, for pinching the limbs caused no reaction, either direct or crossed.

In a fourth frog some other details were examined. The cerebral hemispheres were destroyed, and also the right optic lobe, the left, together with the cerebellum and medulla, remaining intact; half a milligramme of *pirotoxine* was injected. For three minutes the animal remained motionless and the respirations were arrested. Then they recommenced at the rate of thirty-three a minute.

In five minutes the right leg was observed to be paralyzed. I extended it without resistance, and it remained passively extended from that time. Extension of the left leg was resisted, and the animal turned its body over to the right side, using the extended right leg as a fulcrum, and drawing up the left leg. Repetition of the experiment, after replacing the frog, was followed by precisely the same results.

In six minutes pinching the right leg was followed by no movement; pinching of the left leg, by immediate withdrawal of the limb. At this time both arms became rigid.

In ten minutes the arms were flexed toward each other and resistant.

In eleven minutes the toes of the left foot were widely extended, and the animal raised itself up on its arms.

In twelve minutes there was a slight convulsive extension of the left leg, and then the frog moved the trunk over to the right side.

In twenty minutes both sciatic nerves were exposed, and a weak faradaic current was applied. The secondary coil of a Du Bois-Reymond apparatus stood at four hundred millimetres. This elicited distinct contractions in each leg, and showed

quite as much strength in the paralyzed as in the non-paralyzed limb. Thus there was no peripheric paralysis. The faradization caused no convulsion, no reflex excitement. This fact would seem to accord with Roeber's observation, that the reflex excitability was greatly diminished during *pirotoxine* poisoning. Roeber tested this by the length of time required to withdraw the leg of the frog after irritation of the toes by acid. The time, measured by a metronome beating one hundred times in a minute, increased from five beats to thirty nine. At twenty-one minutes, during a convulsion with tendency to *opisthotonos*, the faradaic current was applied to the right optic lobe, and the convulsion was intensified. In twenty-six minutes, during absence of convulsion, faradization of the optic lobe brought on a convulsion. But when the current was sent through the cord, by placing one electrode on its exposed upper extremity and the other on the intact cutaneous surface over the spinal column, there was no convulsion, nor movement of either leg until the secondary cylinder stood at one hundred and forty millimetres. Then, though without convulsion, contractions occurred in both arms and slightly in the left leg; none in the right (paralyzed) leg. At one hundred and twenty millimetres, however, contractions occurred in this leg also. Thus the conducting power of the right half of the cord, though diminished, was not annihilated.

The principal result of this experiment is that, after destruction of one optic lobe and possibly some injury of the corresponding half of the medulla, the *pirotoxine* caused no convulsion in the limb paralyzed by this lesion. Thus the *pirotoxine*, though having free access to the cord and peripheric nerves, did not affect them. These organs, on the other hand, remained intact and responsive to faradaic stimulation.

In a fifth frog the heart was exposed, and, as in the fourth experiment, only half a milligramme of *pirotoxine* was given. This was one sixth of the dose given by Roeber, and, possibly on that account, I did not observe the slowing of cardiac beats described by him. Nevertheless, marked *opisthotonic* convulsions occurred, and also another phenomenon exactly as Roeber describes it. The lung was forced up through the open thorax in a condition of extreme superdistension, so that it could not be replaced. Instead of the rosy hue that a herniated lung usually exhibits, this was extremely pale. It was evident that the blood-vessels in it were all contracted; and, as such contraction can not be attributed to vaso-motor irritation, vaso-motor nerves apparently not existing in the lungs, we must ascribe the phenomenon to the irritation of the pneumogastric nerve or its origin in the medulla.

Roeber found that section of the pneumogastric prevented the *pirotoxine* from slowing the pulse, or restricted the slowing to a few beats. This justified him in assuming that the *pirotoxine* markedly irritated the pneumogastric root, and thus, on the one hand, slowed the pulse and, on the other hand, quickened and intensified the inspiration. The distension of the lung by increased depth of inspiration causes, in intact frogs, a swelling of the sides of the body, which is presently followed by a collapse. The collapse coincides with the cry which I have already noted as adding so markedly to the epileptoid character of the convulsions. When the jaws are separated from the brain, so that the larynx is exposed, it is said that, at a certain stage of the poisoning, the vocal cords may be seen to approximate to each other spasmodically. When, at this moment, the

expiratory collapse of the overdistended lung occurs, an increased volume of air is driven forcibly through the narrowed glottis, thus automatically causing the sound or cry.

To further test the effect of picrotoxine upon the brain, I administered it to a rabbit whose brain (under ether) had been previously exposed and portions successively sliced away as follows:

First, a vertical section was made at the level of a horizontal line that should intersect the middle of the eyebrows; all the brain anterior to this line was removed. No convulsions occurred. Ten minutes later the surface of the remaining brain was removed to the depth of one sixteenth of an inch or more, and over a surface extending to a line intersecting the posterior extremities of the orbital ridges; ten minutes later a similar slice was cut away from all the exposed surface of the brain as far back as the occipital ridge. To arrest bleeding, which, however, was not excessive, some subsulphate of iron was dusted over the surface of the brain, subjacent to the section which had removed the gray matter. The animal was quite quiet, but retained its sensibility, which was indeed exalted on the periphery. Even when the anæsthetic was withdrawn it showed no sign of pain during operations on the cranium or brain; but when the ether was approached again to the nose, it shrieked loudly and struggled violently, and did the same when one of the paws was pinched. Then quiet was resumed. Two milligrammes, or one thirtieth of a grain, of picrotoxine were injected subcutaneously. The flanks began to move more rapidly almost at once, and in a few minutes the respirations were fifty-four, and a little later sixty-three to a minute.

The dose was a medium between the fortieth of a grain employed by Crichton Brown, which produced twitchings of

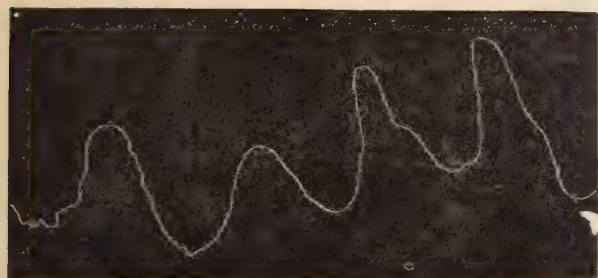


FIG. 1.—Sphygmogram from Case I, before picrotoxine.

the ears but no convulsions, and the one twenty-fourth of a grain, which caused severe convulsions. The convulsion that did occur indicated that an adequate dose had been given, but the brevity and limitation of the convulsive



FIG. 2.—Two minutes after the ingestion of 3 minims of fluid extract of cocculus indicus.

phenomena suggested that they had been restrained by the operation on the brain. The ideomotor centers had been destroyed, and the relatively negative results might seem to indicate that, in a normal condition, it was upon these centers that the drug principally exerted its influence. But so short a time had elapsed after the mutilation that it

seemed more probable that the subjacent encephalon was still in a state of irritation, and so inhibiting the action of the lower centers. The powdered iron over the surface would easily contribute to this effect.

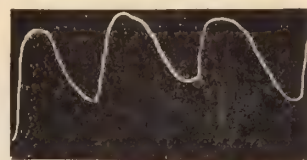


FIG. 3.—Seven minutes after the ingestion of cocculus indicus.

Picrotoxine has been observed to slow the pulse at the same time that it quickened the respiration. Roeber found that, if in frogs the pneumogastric nerve was cut previous to the administration of the poison, the pulse did not become nearly so slow. He inferred, therefore, that the effect on



FIG. 4.—Seventy minutes after the ingestion of cocculus indicus.

the heart was mainly due to irritation of the medullary end of the pneumogastric nerves; in part, however, to a direct impression of the drug upon the inhibitory ganglia of the heart, or of the termination in them of the pneumogastric nerves. The same irritation of the medullary centers which should slow the pulse by inhibition should be the cause of the quickened respiration.

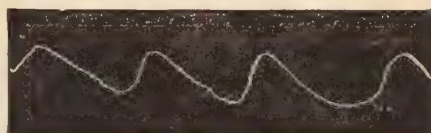


FIG. 5.—Two minutes after the ingestion of the second dose of cocculus; the pulse rises from 92 to 108.

These experiments were performed on frogs. My own, already related, have shown, on a rabbit, the acceleration of the respiration. The influence of picrotoxine on the circulation was more closely studied upon a dog in which the blood-pressure was measured. The tracings exhibit a marked effect of the drug. Fig. 8 is a tracing taken immediately before the administration of picrotoxine. Fig. 9

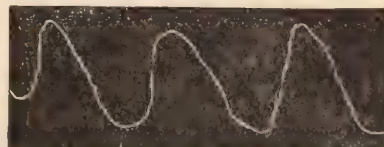


FIG. 6.—Four minutes after the ingestion of the second dose.

is a tracing taken five minutes after the injection of 0.001 gramme of picrotoxine into the jugular vein. We note first a moderate slowing of the pulse in comparison with the respiration, there being six instead of eleven pulsations to each respiration; at the same time each pulse-wave increases a little in amplitude. The respiratory movements were ac-

celerated—eight to a unit of time instead of four. Forty-five pulsations can be counted in the same time instead of forty-one. After a second milligramme of picrotoxine (see Fig. 10) the amplitude of both pulse and respiratory curves is considerably increased, as also the duration of the respira-



FIG. 7.—Fifteen minutes after the ingestion of the second dose; the pulse has fallen to 96.

tion. On the latter account, the number of pulsations to each respiration is also increased, rising to twelve; in the same unit of time there are eight respirations and forty-five pulsations.

After a second injection of a milligramme the amplitude of both pulse and respiration waves still further in-

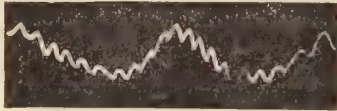


FIG. 8.—A blood-pressure tracing from the carotid of a dog, before the administration of picrotoxine; eleven pulsations to each respiration, four respirations in a unit of time.

creased, the fourth tracing showing the maximum of both attained during the observation. The pulse is now slowed, as well as the respiration; there are only twenty-one pulsations and one respiration and a half in a unit of time. The number of pulsations to a respiration is, however, doubled, rising from six to twelve. Afterward the pulsations in the

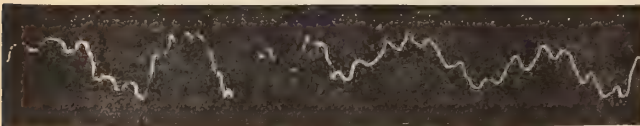


FIG. 9.

same unit of time fall to eighteen, rising again to twenty-one when the respiration, which had fallen to one, rises to a little more than one in the same unit.

Some of the tracings, especially in Fig. 10, show that the prolongation of the respiratory excursion is especially marked in the inspiratory phase, shown at the lower part of the curve.

These curves also exhibit a diminished pulse-wave during the ascent or beginning of expiration, and usually a slackening of the pulse with increased amplitude during the descent of the curve or beginning of inspiration. This

is the normal proportion. The changes described were not accompanied by any change in the arterial tension or pressure; the lever of the manometer did not rise; the mercury stood at the same height as before.

Slowing of the pulse was observed to a moderate extent upon a patient who exhibited no other effect of the drug. After one drop of the fluid extract of *cocculus indicus* the pulse fell in an hour from 75 to 70, but no effect was produced during the first fifteen minutes. Two drops slowed the pulse from 80 to 70 in fifteen minutes, and the same rate was observed at the end of an hour. With four drops the pulse fell from 70 to 64 in ten minutes, but in fifteen minutes rose again to 68. With five drops, also, the result was a slight acceleration of the pulse, which rose from 72 to 80, and at the end of an hour was still 76.

In another patient sphygmographic traces were taken. No. 1 is the trace before the administration of the drug. It is taken with a Mahomed's sphygmograph, under a pressure of seven ounces, and shows a pulse of extremely low tension and very variable in character. The patient was an extremely nervous person, without any organic disease. Three minims of the fluid extract of *cocculus* were taken by the mouth, and a new sphygmographic observation was made in two minutes (see Fig. 2). A very marked increase in the tension and the regularity of the pulse is observable. In seven minutes the pulse is released from the first effect, the tension falls again, and the pulse-wave tends to resume its original amplitude, but not the irregularity or degree of diastole existing before taking the medicine (see Fig. 3). Tracing 4 shows the pulse at one hour and ten minutes after taking the *cocculus*. Its characters resemble those observed immediately after the drug, and not those noticed in seven minutes. At this time the pulse-rate was 92. A second dose of three minims was then taken. In two minutes, as shown by tracing 5, the pulse-rate rose to 108; the pulse-wave became a little more ample. In four minutes the tension diminished, exactly as it had done in seven minutes after the first dose (trace 6). In fifteen minutes the rate had fallen to 96, and the increased tension had been resumed, the tidal wave being somewhat less ample than at two minutes after the drug.

On another occasion, when the patient took the medicine at home and merely counted the pulse, the rate was found to remain the same—it was 96 at the end of two minutes and ten minutes, but in an hour had fallen to 86. It is stated that before the medicine the pulse was weak and compressible, the patient suffering at the time from a severe neuralgic headache. In ten minutes, the pulse-rate remaining unchanged, its character was modified, being more am-

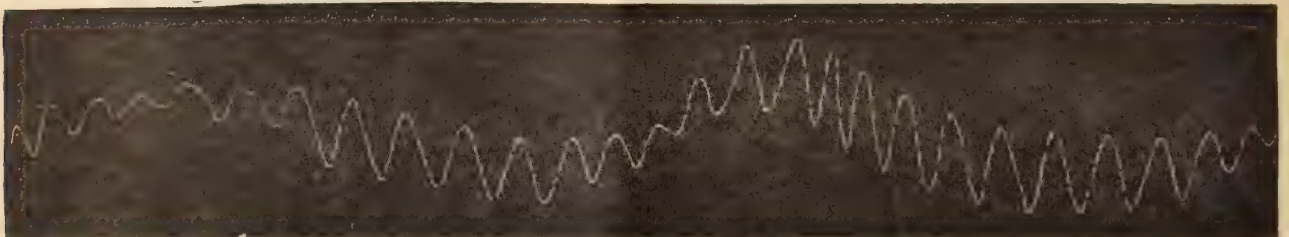


FIG. 10.—A tracing immediately after the injection of a second milligramme of picrotoxine; pulse excursions greatly amplified, twelve pulsations to each respiration, a respiration and a half to a unit of time. A few minutes later there were eighteen pulsations to each respiration and one respiration to a unit of time.

ple and less compressible. At the end of an hour, when the pulse had slowed ten beats a minute, the neuralgic pain had subsided; indeed, it began to lessen in half an hour.

The first time this patient took the *cocculus* was a few days before a menstrual period. Three drops were taken. In two minutes the heart began to throb violently, then beat hard, but slowly. At the same time arose a feeling of a ball in the throat and suffocation, then of great depression and weakness; she could scarcely speak aloud. These symptoms passed away after a dose of brandy. They were not observed on any subsequent occasion, although the medicine was continued at the same dose every four hours for several days. Another patient, subject, like the first, to violent nervous headaches and spasmodic dysmenorrhœa, noticed after each dose of the *cocculus*—from one to four minims—a feeling of warmth to an uncomfortable degree, as if she had a fever; the feeling lasted about fifteen minutes. This effect recurred before the menstruation, but during the period, when a larger dose—of five minims—was taken, no such effect was produced.

The most interesting circumstance about the convulsions which are so prominent an effect of poisonous doses of picrotoxine is their marked epileptoid character, at least in warm-blooded animals. Crichton Browne insists that the convulsions consist, like those of epilepsy, in sudden excessive discharges from co-ordinated centers, not only in the medulla and pons, but also, and to begin with, in the cerebrum. The initial lethargy, noticeable in both rabbits and frogs, indicates an action on the cerebrum, as does also the succeeding stage of restlessness and unsteadiness of gait. Browne compares the picrotoxine convulsions to those which Ferrier excites by electrical stimulation of the cerebral hemispheres. Thus there are—

1. Twitching of the head and ears, due to irritation of a region in the lower part of the frontal lobes, close to the main trunk of the middle cerebral artery.
2. Convulsive movements of the eyebrows, eyelids, mouth, and fore paws, the cortical centers of which are localized in an area surrounding the former, and corresponding to the distribution of the middle cerebral artery.
3. Some movements of the tail and hind legs which are to be referred to a more remote point, close to the median fissure, and corresponding to the outermost ramifications of the same artery.

The corpora quadrigemina, cerebellum, pons, and medulla are drawn into the vortex of morbid perturbation, partly by the explosion of the higher center, and partly by the direct action of the poison. The implication of the corpora quadrigemina is marked by the occurrence of opisthotonos. Nystagmus indicates affection of the cerebellum; sudden exacerbation of the spasms shows irritation of the pons and medulla. Browne further insists on the facts which indicate that the spinal cord remains exempt from the influence of the drug; just the facts which I have recounted in my experiments on the frog. In them there was no hyperæsthesia, and there were no reflex spasms from peripheric irritation, either mechanical or electrical; convulsions were not induced by sensory irritation, but were (in the intact frog) by attempts at voluntary motion, which

implied stimulus of the cerebrum. This condition is in marked contrast with that induced by strychnine.

Browne thinks, finally, that the severity and long continuance of the convulsion also imply that it is due to irritation of the cerebrum. Planat, whose essay in 1875 seems to have initiated modern therapeutic experiments with picrotoxine, denies any action upon the brain, and explains its effects by irritation of the pons, and also, strange to say, an action on the cerebellum and cord.

Crichton Browne's theory is dominated by the prevailing English view of epilepsy, as formulated by Hughlings Jackson and Gowers, namely, that its seat is in the cerebrum rather than in the medulla. In antagonism to the theory is the fact that in the frogs from which the cerebrum was removed the convulsions were earlier and more severe than when the cerebrum as well as the medulla was intact. But it would be quite in accord with this theory that the rabbit from which the frontal lobes had been removed, together with nearly the entire cortex from the rest of the brain, should have almost entirely escaped convulsions after one thirtieth of a grain of picrotoxine. Crichton Browne did not perform this experiment; and it is for that very reason that I did, in order to supplement his series of experiments. It is indeed highly probable that the action of a drug like picrotoxine should differ in different animals, there being a special difference between frogs and warm-blooded animals. If, as the epileptoid character of the convulsion implies, the picrotoxine does act upon the cerebral cortex, its action should be expected to vary with the degree of development of the cortex peculiar to the animal experimented upon.

There can be no doubt that it also acts upon the medulla. This is proved in frogs by the convulsions produced when all the higher regions of the encephalon have been removed. But it is also shown, and with doses insufficient to produce convulsions, by the marked changes of the pulse and respiration; and is only explicable by an influence upon the cardiac and inspiratory centers in the medulla. The question arises, Is such stimulation direct or indirect?

The experiments on the dog and on human beings show: 1, that the pulse is accelerated; 2, that it is retarded; 3, that the pulse-wave is greatly amplified; the greatest amplitude a little preceding the moment of maximum retard, but the amplification beginning immediately after the injection of the drug, and with the initial acceleration of the pulse. When the drug is injected into the jugular, the acceleration might possibly be attributed to direct stimulation of the excito-motor ganglia of the heart. But the same acceleration was observed after ingestion by a human being. The acceleration may be compared with the initial pulse acceleration caused by minute doses of digitalis. In that case, however, the pulse-wave is not amplified, as it is so markedly after picrotoxine. The amplification is in excess of what might be due to an increased energy of cardiac contraction. The blood-pressure neither rose nor fell in the carotid tracing, but in the sphygmographic tracing from the radial pulse of an extremely susceptible patient the tension of the arterial wall was greatly increased, as shown

by the diminished height of the percussion stroke. The amplitude of the tidal wave is somewhat increased.

All these circumstances point to a dilatation of the peripheric arteries, permitting a larger pulse-wave, associated with such increased force of cardiac contraction as prevented a fall of blood-pressure. The beginning of the arterial dilatation would account for the initial acceleration of the pulse. The subsequent retardation of the pulse can only be due to stimulation of the medullary center of the pneumogastric. But neither the initial nor consecutive phenomena indicate any stimulation of the neighboring vaso-motor center, but rather its inhibition. The inhibition could depend on an increased energy of action in the cortex of the hemispheres, the normal function of which, as Meynert declares, is to inhibit the subcortical vaso-motor centers.

This effect of picrotoxine, therefore, though manifested through the medulla, would be indirect, and result from the primary stimulus of the brain by the drug. Again, the stimulation of the pneumogastric may be in like manner traceable to a primary effect on the brain, occasioning an increased intracerebral pressure.

The effect on respiration differed in the dog from that in the rabbit and frog. In all these the inspiration became much more energetic, as shown by the curve of the dog's carotid tracing and also by distension of the frog's lung. But in the rabbit and frog the respirations were accelerated; in the dog, after a slight initial acceleration, they were much slackened, and in proportion to the increase in their energy. Now we know that central stimulation of the pneumogastric increases the frequency of inspiration; section of the pneumogastric, especially of both nerves, renders the inspiration much slower and at the same time much fuller and deeper.

The effect of the picrotoxine on the dog imitated the effect of section of the pneumogastric. The excitability of the inspiratory center seemed to be diminished, so that it was necessary that more afferent impulses should accumulate before it reacted, the reaction then being more intense. This behavior resembles that of the inspiratory center under increased intracerebral pressure, as in so many forms of brain disease. The phenomenon might therefore be classed with the phenomena exhibited by the pulse as an indication of increased inhibition over the medullary centers exercised by the cerebral hemispheres. Apparently such an influence is not manifest in the rabbit, the cerebral inhibition in which is normally so much slighter. In our rabbit the inhibition should not be expected, for the cortex was removed. The increased arterial tension in the human being suggests at first increased vaso-motor action; but it simply implies an increased tonus of the arterial wall that had been abnormally deficient, but was now enabled by the drug to better resist the shock of the pulse-wave. Such an increased tonus will result from increased energy of the cerebro-spinal axis throughout its course. It does not necessarily imply contraction of peripheric arteries beyond the point of application of the sphygmograph.

If the foregoing analysis is sound, we should expect to find a good result from picrotoxine in neuroses dependent on deficient energy and inhibiting power in the cerebral

tissue, and similar deficiency in the cord with consequent loss of arterial tonus, irregular vaso-motor action, and spasms of unstriated muscle. Rohrig, as quoted by Falck (*"Lehrbuch der prakt. Toxikol."*, 1880), asserts that the drug excites tetanic cramps of the uterus by irritation of the medullary uterine center. Phillips, on the other hand (quoted in the *"Brit. Med. Journal,"* January, 1880), has administered it with success in the dysmenorrhœa and associated headache of delicate nervous women. I have tried it in three such cases with marked benefit.

CASE I.—An extremely nervous woman of twenty-eight, married about four months. Throughout life, and especially during the last three years, subject to extremely intense dysmenorrhœa, accompanied by violent nervous headaches, which, moreover, recur frequently during the intermenstrual periods. Patient very blonde, with thin, delicate skin, light-blue eyes, and variable pupils. Uterus found in congenital ante flexion with ante flexed cervix, as well as flexion of the body. Impossible to pass even a fine probe with any curve—apparently as much on account of spasm of the canal as of real stenosis. The uterine canal was stretched under ether, the cavity swabbed with iodized phenol, and a glass plug inserted, which remained for several days, though exciting severe uterine cramps. The patient also suffered from vesical cramps. She remained in bed until the next menstruation, the first day of which was quite free from either headache or local pain. The flow, moreover, was extremely profuse, and, apparently from this cause, the second day was attended by severe cramps. After the menstruation the uterine canal was found to readily admit a Peaslee's sound. The patient remained for some weeks much troubled by her severe headaches and also by vesical cramps, the latter finally yielding to faradization. The second menstruation was also profuse and exhausting, but attended with little pain. The succeeding menstruations of January, February, and March were also nearly free from local pain, but attended by headache and exhaustion. In April she began to take the fluid extract of cocculus three days before menstruation, three drops every four hours. On this occasion she had absolutely no pain, felt much stronger, and was able to go out on the third day, the first time in many months. This effort, however, brought on a severe headache. Took three drops of cocculus. In a few minutes the pain was lessened; in ten minutes much easier, and the chilly sensations habitually present with the headache had disappeared. This showed the lessening of vaso-motor spasm.

CASE II.—A girl of eighteen. From the beginning of menstrual life had always suffered extremely severe pain at menstruation. Two years ago I discovered retroflexion and catarrh of the uterus. The displacement was completely rectified, the catarrh was cured, and the circum-uterine tenderness disappeared under iodine applications, yet the menstrual cramps persisted or were only controlled by chlorodyne. This patient was also subject to severe headaches of various kinds and an habitually flushed face. The father had suffered all his life from sick headaches. In the girl's case depletion of the portal circulation with Carlsbad salts often affected the headaches very favorably. In April the cocculus was administered, as in the first case, during three days before menstruation and during the period. The patient had scarcely any local pain, the first time this had happened to her except under the influence of chlorodyne.

CASE III.—A blonde girl of twenty, also with retroflexion of the uterus, with very thin skin, face habitually much flushed, pupils variable, suffering from severe dysmenorrhœal cramps, frequent headaches, and much inability for mental exertion.

The dysmenorrhœa was lessened at the first menstruation after the uterus had been replaced with a pessary. But the administration of cocculus, begun this time on the second day of menstruation, dissipated the remaining pain, and relieved the headache, flushing, and feeling of excess of blood in the head.

Planat, as is well known, advised picrotoxine in an entire list of convulsive diseases, and notably in epilepsy; but also in chorea, eclampsia, or painful contraction of the extremities, and paralysis agitans. Planat related twenty cases of epilepsy benefited or cured by the drug. Gubler indorses its administration. Hammond relates forty-three cases, all benefited, but gives no cure.

I have had as yet no opportunity of using picrotoxine for epilepsy myself, but my friend, Dr. Annie News, formerly of Newport, now of New York, has kindly communicated to me the following case:

CASE IV.—E. P., aged fourteen, before coming under observation, had been for six months affected with petit mal. The attacks, commencing with two or three in a day, had increased to many, sometimes more than twenty, in twenty-four hours. His intellect was becoming impaired; he could no longer acquire his lessons, and had begun to have a slight idiotic look. Had been treated with bromides without effect. I at first gave him Brown-Séquard's preparation, which did not control the attacks, and *did* profoundly depress his system. I then began with tr. coc. ind.; afterward substituted picrotoxine, gr. $\frac{1}{60}$, four times daily, with the effect to control the attacks from the first. They grew fewer in number, and in a few weeks ceased altogether. Stopping the remedy for a week, they returned. It was then given for two months, gradually decreasing the doses to one daily, finally stopping it altogether. It is about five years ago, and the disease has not returned. The boy, I am told, lost his idiotic look, went back to school, and did well in his classes.

The other most noticeable therapeutical application of picrotoxine is as a remedy for the night-sweats of phthisis. Dr. Murrell, who seems to have first used the drug for this purpose, reports twenty cases, with only one failure.

This effect is very singular, for picrotoxine, like pilocarpine, increases the elimination of sweat in normal conditions, acting as an efficient diaphoretic (Bartholow). Its antihidrotic action in disease must therefore also be ranked with the similar action of pilocarpine. Although in phthisis the sweat-glands are presumably irritated, the drugs in question do not act through a sedative influence; but, apparently, a minimum degree of the stimulus which they cause when the excitability of the sweat-centers is at the normal level serves to increase the resistance of these centers to the morbid excitations.

This effect of picrotoxine, therefore, like the increased tonus of the arterial wall, implies that degree of stimulus of the ganglionic centers of the spinal cord which is conveniently expressed as an increased tonus. The expression is schematic, but it corresponds to the general fact of antagonism always existing between the energy of the cerebro-spinal centers and the energy of the vaso-motor centers, or of the peripheric vascular mechanisms of the vaso-motor system. Functional depression of the cerebro-spinal axis is liable to be followed by evidences of uncontrolled and excited action of vaso-motor nerves, spasm of blood-vessels, spasm of unstriated muscular fiber in œsophagus, bladder,

intestine, and uterus. This is the entire *cortège* of hysterical symptoms which are so common when the cerebral cortex has lost its inhibitory control over the subcortical vaso-motor centers.

This, therefore, should be the effect of medicinal doses of picrotoxine: increased tonus or energy of action of the ganglionic tissue of the brain and spinal cord, by which the excitability of vaso-motor mechanisms and of the inspiratory center is restrained, respiration is rendered more energetic, and circulation steadier and more ample.

Exaggeration of this stimulating action causes convulsions which, in the higher animals, from the form, probably start from the cerebral cortex, but which in frogs may start from the medulla alone. The beneficial influence of picrotoxine in epilepsy should be due to its increasing the resistance, and therefore the stability, of cortical tissue, rendering this less liable to irregular discharges. The effect is directly opposite to that of the bromides, which depress the sensory irritability of the same tissue. It resembles the action of picrotoxine on morbidly excited sweat-centers.

The same action should be beneficial in the headache of such nervous women as are relieved of dysmenorrhœa by picrotoxine. The immediate cause of this headache seems to be the lack of tonus in the walls of the cerebral arterioles, which thus yield irregularly to the shock of the pulse-wave and allow it to be transmitted in full force to the nerve-tissue. In addition there is probably irregularity of local blood-supplies, from alternate contraction and dilatation of blood-vessels. All three patients whose dysmenorrhœa was improved noted marked improvement in the accompanying headache.

Relief to the dysmenorrhœa depended on the inhibition of the spasm which the uterine fiber shared in common with all other unstriated muscle. The diffused vaso-motor irritability so often seen just before and during menstruation, in women of the constitution described, seems to be associated with a defect in the wave of supplementary nutrition which should sweep over the nerve-centers at this period, but has failed to do so. If the energy of the brain and cord does not rise in the menstrual period, they become depressed relatively to the medullary centers, and the latter escape from normal restraint and control. Hence a multitude of nervous symptoms, local and diffused, which may accompany organic lesions of the uterus and ovaries, or persist after these have been cured, or manifest themselves in entire absence of structural disease. These symptoms are appropriately treated by picrotoxine. Finally, and for the same reasons, picrotoxine has been found useful in gastrointestinal neuroses, gastric or enteralgic cramp associated with abundant flatus in the colon.

Massage, Rest, and Position in Sciatica.—Dr. A. S. Eccles ("Practitioner," Nov., 1887) has treated with good results fifteen cases of this obstinate condition by massage, combined in some cases with rest and position. Of the fifteen cases which he publishes, four were in the subjects of neuritis, six were of a doubtful character, while five appeared to be distinctly of a neuralgic nature. The author does not consider an inflamed condition of the nerve as a contra-indication of this method of treatment.

APOPLECTIFORM, EPILEPTIFORM, AND HEMIPARETIC ATTACKS IN LOCOMOTOR ATAXIA.

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In those cases of locomotor ataxia which terminate with mental disorders, apoplectiform and epileptiform seizures are not infrequent after the mental disorder has appeared. These seizures differ in no way from those observed in cases of progressive paresis of the insane. Apoplectiform and epileptiform seizures and passing attacks of paresis have not generally been considered a part of the clinical history of locomotor ataxia, and although within the last few years cases have been reported in which these symptoms have been a marked feature in the case, it is a phase of the clinical history of posterior spinal sclerosis which is little known.

Most of the treatises on nervous diseases make no allusion to the possibility of such symptoms appearing in the early part of the disease. That these symptoms should now be considered a part of the clinical picture in locomotor ataxia there is no doubt, as cases reported by Trousseau, Debove, Pierret, Vulpian, Bernhardt, Lecoq, and my own cases, show clearly.

In the last few years some cases having come under my observation in which these apoplectiform and hemiparetic seizures have occurred during the course of the disease, I venture now to report them, with a brief summary of a few of the cases reported by others.

CASE I (Personal).—B., aged forty-five (?), lawyer, referred to me by Dr. Mathewson and Dr. C. R. Agnew, seen by me in August, 1886. He is a large, stout man, and in former years appeared to his friends in vigorous health. About fifteen or eighteen years ago he suffered from what he calls neuralgia in his legs, for which, at the advice of his physician, he took Russian baths. The pain was most severe in the right leg; it was sharp and stabbing in character. Soon after this (he is unable to say just how long) he began to have pains and numbness in the soles of his feet; soon this numb feeling extended up his legs and after a time into his hands. These neuralgic pains, as he calls them, lasted about a year and a half and ceased; he has never had any pains as severe since. About this time or soon after he began to have on his body, arms, and legs spots of numbness with burning pain in them; they were of about the size of a silver dollar; they were not constant, but would come and go from time to time.

Some ten years ago he consulted Dr. Mathewson for dilatation of the left pupil. In about 1880 or 1881 his first disturbance in walking began. He was one day playing lawn-tennis with some friends. In attempting to run after a ball he suddenly felt "as if his back-bone had been taken away from him," and he fell to the ground at once. He had no pain in his back. From this time he began to have some unsteadiness in walking. About ten years ago he began to lose his hearing. Some time ago he had cramps in his toes, especially if he were putting the muscles in action. About two years ago he began to have the feeling as if an iron band were drawn tightly around the lower part of his abdomen. In July, 1886, one night when it was very hot and he was coming from Albany to New York on the boat, on going to bed he noticed that his left hand and leg were more numb than usual. During the night he was awakened with intense numbness in the hand. When he attempted to arise in the

morning he felt faint and sick at his stomach, and was unable to stand without holding on to some piece of furniture. He was unable to use the left arm and leg; could not dress himself. He had to be dressed, carried off the boat, and put in a carriage; when he reached home the coachman had to help him upstairs. The arm and leg remained so weak that day that he was unable to move about his room, but the next day he was sufficiently recovered to be able to get to New York from his house in Brooklyn. He has never had an attack of the kind since. At present the left pupil is still dilated, the optic nerves pale, the pupillary reactions quite sluggish, the tendon reflex absent, and the muscular power in both lower and upper extremities remarkably good. He is now completely deaf, even to the tuning-fork.

He is quite ataxic in the upper and lower extremities. He has mitral disease, casts and albumin in the urine. He denies syphilis.

CASE II (Personal).—C. E., aged fifty, seen September, 1885. He has always enjoyed good health; never had syphilis. Is an excitable man and has always worked hard. About eighteen months ago he had some pleurisy and bronchitis, from which he entirely recovered. Has been doing a good deal of work of late, which he thinks was more than he could well accomplish, and he was anxious and worried about it. Three months ago, one day at about 11 A. M., he was standing near a mantel-piece taking a glass of ale, when he suddenly felt faint and dizzy, fell at once to the floor, and lost consciousness, he thinks for not more than twenty or thirty seconds; he had no convulsions; immediately after he found difficulty in walking, was quite unsteady, had to hold on to the furniture to get about the room; when he was able to go into the street, he found it necessary to take his wife's arm to steady himself. He complains of an "icy," sometimes a "drawing sensation" in the back of his head and neck. There are no pupillary changes; the fundus of both eyes are healthy; tendon reflex present; muscular power good; shows some unsteadiness in walking and standing with his eyes shut; no other symptoms present.

October 31st.—The peculiar sensation in the back of his head and neck has entirely disappeared, but he still has the unsteadiness in walking, and has to take his wife's arm when in the street. In the last week he has had sharp, lancinating pains in various parts of his body, legs, and face. His difficulty in walking has increased, and shows itself most when he starts to walk; then he is quite unsteady. He has no disturbance of sensation, no urinary or visceral disorder, and never had diplopia. He is quite ataxic and unsteady in the lower extremities; this is shown especially when he passes through a door or attempts to cross the sidewalk or step up on the curb-stone.

This patient removed to another city, and I did not see him again.

CASE III (Personal).—H., aged forty-two, married, seen in January, 1887. Syphilitic infection denied. Health good up to beginning of present condition. Eight years ago he had loss of consciousness for a very few minutes, followed by some thickness of speech and weakness of the right side, which soon passed away. About three years ago, one cold morning, when having breakfast in a restaurant, he suddenly had loss of vision, beginning in the right eye. He claims that the upper half of the visual field was first obscured, then the lower; it lasted only a short time.

His present condition shows the toes of the right foot very much swollen; they are white and puffy, and are the seat of intense, sharp pain. He attributes this condition of his toes to the wearing of a shoe which he says must have caused it. He admits having sharp pains in the legs, but it is very difficult to get a history from him. No pupillary changes at present. No

ophthalmoscopic examination made, and, owing to the painful condition of his foot, no satisfactory examination can be made of the lower extremities.

In this case the swelling of the foot is unquestionably the evidence of some nerve lesion. It is similar to the arthropathic troubles seen in the knee and other joints in locomotor ataxia.

CASE IV (Personal).—C., aged thirty-six, seen in March, 1888. Has always been of a nervous, active temperament, and a hard worker. Has always enjoyed good health up to ten years ago, when he contracted syphilis. The only secondary manifestation which he says he has had was an ulcer of the tongue near the root, the scar of which can now be seen. For the past seven years he has suffered intense pain in the legs, which he calls neuralgia. These pains occur at all times, but mostly at night; they come in paroxysms, lasting from twelve to twenty-four hours or more; they occur in localized spots, which he says he could cover with the palm of his hand; they may be in his thighs, below the knees, or in his feet. His little toe is a favorite place for these pains; they are lancinating in character, and very severe. In the past year he has begun to have some pains in his arms, but they are not severe. About a year ago he began to feel weak compared to what he formerly did. Found he could not do so much work or as quickly. Became easily fatigued, and his legs became easily tired. About four weeks ago his business occasioned his making a visit to a neighboring city. While there, one evening, when sitting in a restaurant with a friend and resting his left arm across the back of a chair, he suddenly felt a peculiar numb feeling in the entire arm, which was soon followed by the same feeling in the leg and entire half of the body, including the head and face. He was alarmed, and, on attempting to arise from his chair, found he was unable to do so except with difficulty. Of his condition he gives a minute description. He had a certain amount of muscular power in the extremities, but he had no control over their movements; he could not put his leg where he wanted it. This inability to guide the parts was most marked in the upper extremity. When he attempted to take his hat from the rack he groped about in all directions before he could get it, and when he tried to take his cigar out of his mouth his hand was so much beyond his control that he got his fingers on the ashes and lighted end. He illustrates this action to me, and it appears to have been a combination of paresis and ataxia. With aid he reached his hotel, and the next day returned to Brooklyn, where with difficulty he reached home and got upstairs to bed. A few days afterward he began to have severe pain in the left side of the head, which continued more or less for twenty days; at times it was intense; during some of these paroxysms he was almost delirious. When I first saw him he was suffering this intense pain; after its relief, and further examination made, it was found that he had no remains whatever of the hemiparetic attack or disturbance of sensibility. Pupillary reaction to light and accommodation are very sluggish, and the pupils are small. The ophthalmoscope reveals no changes in the fundus; tendon reflex absent; he appears to have no ataxia, but the Romberg symptom is very decided. He has a peculiar sharp cough, which is frequent and no condition of his lungs or throat explains, and which I look upon as a disturbance of the laryngeal nerves. He has also a kind of choreic twitching of the shoulders. He is still under observation. Trousseau appears to have been the first to speak of this condition in locomotor ataxia, for, in his lectures on "Clinical Medicine" (Sydenham Society translation, vol. i, page 143), he says, in the chapter on locomotor ataxia: "Certain forms of transient paralysis also precede the want of co-ordination."

CASE V.—I was lately consulted by a gentleman from Côte-d'Or who, nine months ago, was suddenly seized with left

hemiplegia. There was no impairment of the intellect, and he could resume his occupation at the end of a week. "In July of the same year the patient was seized, on two different occasions, with paralysis of the tongue, of a few seconds' duration only. From that time, however, his gait became uncertain, and the locomotor ataxia soon made frightfully rapid progress."

In 1881 Debove, in an article on hemiplegia of ataxics, records two cases:

CASE VI.—A man, forty-eight years old, who never had syphilis, and up to the age of twenty-five enjoyed good health. At this age he began to have paroxysms of lancinating pains in his thighs; at twenty-seven years of age he had diplopia, which lasted a year; at thirty-three he began to have gastric crises; and later he began to have difficulty in walking about, and soon his walk was ataxic. In 1871 he had a fracture of the femur, from which he recovered. In 1876 he had a sudden attack of right hemiplegia, with aphasia; these paralytic symptoms had entirely disappeared at the end of five days. In May, 1880, one morning he found difficulty in moving his right arm; in twenty-four hours it was impossible for him to move it; later the leg became weak, and he had difficulty in speaking, and right facial paralysis. This attack of hemiplegia did not pass off before his death, which occurred in July.

Debove looks upon the first attack of hemiplegia as dependent upon the tabes; no lesion was discovered to account for it. The second attack appeared to depend upon a spot of softening in the left half of the pons.

CASE VII (Debove's second case).—A man, fifty-eight, who had lancinating pains in his legs since 1865. Inco-ordination in 1874. In 1863 he found one morning that it was impossible for him to move the right upper and lower extremity, and he had difficulty in speaking. The hemiplegia gradually improved, and in eighteen months he had no remains whatever of it. When examined by Debove in 1881, there was not a trace of hemiplegia.

A very interesting case is published by Vulpian in "Archiv. de médecine" (1882), which is briefly given here:

CASE VIII (Vulpian).—A man, twenty-seven years old, who had no neurotic family history. He had not had syphilis. Neither had he used alcoholic drinks to excess. Since the age of eighteen, which was in 1870, he had had diarrhœa, which came on every two months and lasted about three or four days. In 1879, while in a coffee-house after his breakfast, he was taken suddenly with vertigo, weakness, and unconsciousness; he said he was not convulsed, there was no discharge of saliva from his lips, and he did not bite his tongue; five minutes after he had recovered himself.

In the following May, one evening he was taken, without vertigo or stupor, with spasm of the left facial muscles and left eye. He did not lose consciousness. Five minutes after, he had entirely recovered. Toward the end of this month he became weak; he tired easily. From time to time he had headache, which caused the sensation of a vise compressing the forehead and the two temples, and a burning sensation in the forehead. In September he had to do military duty, but was unable to; his legs flexed under him, and he became exempt from all duty. His condition when admitted to the hospital under Vulpian was headache every day, in paroxysms of short duration; it was at times very severe and accompanied by redness of the face, congestion of the conjunctiva, and a feeling of fullness in the head. There were abnormalities of sensibility. The tendon reflex was absent. He appeared to have no true lightning pains; there was rather a sensation of small shocks; the pupils were contracted. On November

29th he had a sudden loss of consciousness, preceded by a sensation of formication passing from the extremities to the head. On December 12th, when on his way to take a sulphur bath, he was taken with an attack, and was found on the stairway in an unconscious condition with epileptiform convulsions in the four extremities; the attack appeared to have lasted half an hour; when he recovered he could not speak; he had almost complete right hemiplegia without manifest disturbance of sensibility. By December 19th he began to speak somewhat freely. December 30th the hemiplegia had entirely disappeared.

In 1882 Bernhardt reports two cases:

CASE IX (Bernhardt).—A man, aged forty-seven, who for the past five years has suffered from pains in the lower extremities, sensory disturbances, and disorders of motion. He can not stand erect without support; he has diplopia, and the tendon reflex is absent. Ten weeks ago he had sudden motor weakness in the right arm, which soon passed away; at the same time he had for ten minutes inability to speak. Six weeks after, he had twenty attacks of the same kind in twenty-four hours, and always accompanied with disturbance of speech.

CASE X (Bernhardt).—A man, forty-four years old, who for many years had experienced painful sensations in the right half of his face. Three years and a half ago he was taken suddenly with aphasia; speech soon returned, but in the evening he lost consciousness, which lasted three quarters of an hour. Two years ago he began to have lancinating pains and difficulty in walking. The tendon reflex was absent and there was diminution of sensibility to pain.

Lecoq, in 1882, in an essay on this subject, gives a number of similar cases.

Dr. William A. Hammond, in his work on "Nervous Diseases," in speaking of locomotor ataxia, says: "The first symptoms may be cerebral, and may consist of attacks of vertigo, pains, either in the front or back of the head, epileptic fits, etc."

In one of my cases there is a clear history of syphilitic infection, and objection may be made to the case on this ground. Apoplectiform and epileptiform seizures have been spoken of by Fournier in those cases which he calls locomotor ataxia of syphilitic origin. When the symptoms up to this time present in my case are so typical of posterior spinal sclerosis, and it has been shown in the last few years that something like seventy-five per cent. of the cases of locomotor ataxia give a history of syphilitic infection (Erb, Seguin, and others), this case is, I think, justly classed as one of posterior spinal sclerosis of the usual type.

These cases are sufficient to show that apoplectiform and hemiparetic seizures are not so infrequent in locomotor ataxia, and that their importance as a part of the clinical history of this disease has not been sufficiently recognized. When these symptoms appear early in the course of the disease, as they do sometimes, if careful inquiry be not made it may lead to errors in diagnosis. It is at present impossible to offer any satisfactory explanation as to the cause of these sudden and temporary seizures. The explanation usually offered of the apoplectiform and epileptiform seizures in general paralysis of the insane, a condition somewhat allied, is that they depend upon localized congestions, an explanation which has always appeared to me unsatisfactory. It is now well known that in the course of locomotor ataxia

we may have more or less sudden paralysis of muscles which are under the innervation of certain nerves, such as paralysis of the muscles supplied by the third nerve, or of the facial or the anterior tibial, which are temporary, and probably dependent upon a neuritis. The occurrence of the apoplectiform seizures in the ordinary cases of ataxia has led Grasset to the conclusion that locomotor ataxia, instead of being a disease confined to the posterior columns of the cord, is really a more or less diffuse lesion of the cerebro-spinal axis. This view of the subject appears to be not without foundation.

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THE USE OF ANTIPYRINE DURING LABOR.

By EGBERT H. GRANDIN, M. D.

ALTHOUGH it is written, "In sorrow thou shalt bring forth children," it is the laudable aim of the obstetrician of to-day to mitigate, in so far as he is able, the pangs of childbirth. The means to this end to which we may resort without damage to either the mother or the child are few in number, and the most valuable of all justly finds its chief rank after the completion of the first stage of labor. During this stage the accoucheur is in a position to do but little toward relieving the maternal suffering, and this little consists in the administration of opium or of chloral. The former drug I have always been loath to administer to the parturient, for the reason that if pushed it may retard the labor, and further because it is of the highest importance to the puerpera that the intestines should functionate normally in order that this main emunctory should not become locked, and poisoning from fecal accumulation ensue. In chloral we possess a most valuable means of "taking the edge off the pains" and of regulating their rhythm, but the woman's suffering during the acme of the pains is still intense, and we often wish we had an adjuvant to the chloral which, whilst nullifying none of its effects, would render the contractions practically painless. In the hands of certain observers, electricity—the faradaic form chiefly—

has rendered service in this direction, but, valuable as this agent has proved in my hands as an oxytocic, it has never appeared to me to possess any anæsthetic effect on the uterus. When cocaine was discovered, before long it was heralded as of value as a local anæsthetic during childbirth. In my hands, however (and other observers are in accord with me), it has proved of no value whatsoever during the first stage of labor, and questionably if at all during the second stage. The excellent results yielded me by antipyrine in dysmenorrhœa and other affections where it is a question of nerve pain have led me during the past year to test it during the first stage of labor, and my results have been sufficiently gratifying to justify me in asking other obstetricians to try the drug. Possibly it has been similarly used by others, but if such be the case I have seen no record of their experience. My habit in regard to the administration of the drug is to give fifteen grains well diluted, and preferably with some stimulant, such as the aromatic spirits of ammonia, and to repeat the dose in one hour thereafter. In two hours after the second dose the patient receives ten grains, and so on every two hours if needed. The chloral mixture I administer, as has always been my custom, in fifteen-grain doses every three quarters of an hour till three to four doses have been received. The result of this combination has been to nullify the pains so much as to be in two instances scarcely perceptible, and in others simply uncomfortable. The progress of labor has not been at all interfered with, and neither the mother nor the child have presented evidence of injury from the administration of the antipyrine.

I report this experience thus briefly in order that other observers may test the validity of my results. Should there be concurrence of opinion, the first stage of labor will be rendered practically painless by antipyrine, even as the second and the third may at any time be made through resort to chloroform.

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THE USE OF DRAINAGE-TUBES AFTER OVARIOTOMY.

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WHILE the use of drainage-tubes has enabled many a patient who has undergone ovariectomy to recover who would otherwise have died from septicæmia, peritonitis, or secondary hæmorrhage, their abuse or misuse has undoubtedly caused or been a prominent factor in two bad after-results occasionally following an otherwise successful recovery from the operation.

It is the object of this paper to mention the various kinds of drainage-tubes in general use, with their merits and disadvantages; also to briefly indicate in what cases and how they may be used so as to lessen the danger of hernia and that which should so seldom follow, but which so frequently does, an incurable deep sinus leading into the abdominal cavity.

That the glory of many a brilliant operation is dimmed by such unfortunate sequelæ must be admitted, and I have no doubt that if as much careful attention was paid to the selection, care, and removal of the drainage-tube as to the sewing up of the abdominal wound, it would result in fewer hernias, and a decidedly smaller percentage of sinuses. Whenever, following the removal of any organ or tumor from the abdominal cavity, or even a simple exploratory incision, there is oozing of blood to any extent into the peritoneal cavity, or any good reason to expect hæmorrhage into the same on account of numerous torn adhesions, it is always conservative surgery to insert a tube.

When any foreign fluid—as pus, ovarian, etc.—has found its way into the peritoneal cavity, a drainage-tube should be used. Certain operators—as Goodell, Péan, Olshausen, Martin, and Tait—hold radically different views, preferring, in most instances, to close the wound entirely; after cleansing the peritoneal cavity by sponging, etc. Sterilized water and certain dilute chemical solutions, as dilute boric acid, used for the purpose of washing out the peritoneal cavity, are innocuous at about the temperature of the body and in small quantities in themselves, but usually where there is any occasion for their use we have other conditions present, which we have already mentioned, as the presence of pus, ovarian fluid, or blood, rendering it safer to employ the drainage-tube. When, however, warm water is poured into the peritoneal cavity in case of shock, if the greater portion can be removed at the time, no drainage is necessary, as the little remaining will undoubtedly become absorbed. Pus-cavities, it is unnecessary to state, should always be drained, and very thoroughly, more than one tube being used if necessary.

The advisability of employing drainage when ascites is found following an exploratory incision depends on the end in view—that is, whether an attempt is to be made to permanently relieve the patient of this complication or not, and also brings up the question of the cause of the accumulation of fluid. If the cause of the ascites can be removed at the time of the operation, as when due to the pressure from a tumor, etc., and the fluid in itself is not malignant, there is no necessity of establishing drainage for the little which afterward remains. In most cases of cancer of the peritonæum accompanied by ascites drainage is also unnecessary. In such a case, where an exploratory incision has been made and it is deemed useless to remove the cancerous mass, the operator gains nothing by using a tube, but does give the patient a decidedly better chance of rallying from the operation and dying a natural death by simply sewing up the wound, and from time to time afterward removing the accumulating fluid by tapping, whenever the necessity arises. With the single exception of tubercular peritonitis, in affections complicated with ascites, I think few operators would advocate the use of the tube unless there was some other element present, as hæmorrhage, escape of cyst fluid into the peritoneal cavity, or pus. Occasionally, however, the events subsequent to an exploratory incision for cancer of the peritonæum prove that it would have been the wisest plan to have established drainage in the first place. For instance, in one of these cases which I saw some

time ago, the surgeon operating sewed up the abdominal wound completely. In a short time the ascitic fluid commenced to rapidly reaccumulate, a decided hectic developed, and suddenly one day an enormous quantity of purulent and most fœtid fluid escaped through the weakened line of incision. Probably drainage would have prevented this accumulation of pus. This patient, of course, died in a short time. At the time of the operation, from the character of the fluid, etc., no one thought drainage even advisable.

Ascites due to tuberculosis of the peritonæum has occasionally been permanently cured by drainage, and this method of treatment is now recognized, not only as a justifiable procedure, but as one which offers a person afflicted with this dread disease a strong probability of recovery. Lately, however, several cases* of this nature have been reported where the simple removal of the ascites following an exploratory incision has resulted in a cure, and this without the use of drainage; so that in these cases, from the experience taught from these more recent operations, it would seem perfectly justifiable to omit the tube.

It might be supposed where a drainage-tube had been introduced into the peritoneal cavity, when ascitic fluid was present, that we should have a steady oozing from the tube for a long time. This is seldom the case except prior to the second or third day. On the contrary, a layer of lymph soon forms around the drainage-tube, and in the course of two or three days completely cuts off all communication with the peritoneal cavity. In tubercular peritonitis with ascites, the sinus seems to remain open, according to the experience of several operators, and permits of permanent drainage.

In about 150 cases of laparotomy which have been directly under my observation, and in many of which there were drainage-tubes inserted, in I should say a quarter of all the cases, with one exception, all communication with the healthy peritonæum was cut off in two or three days, usually earlier. Quite recently Dr. Polk and Dr. Klotz† came before the public advocating the radical cure of retroversions and flexions of the uterus by performing laparotomy, freeing the malplaced and possibly adherent uterus, and stitching each round ligament close to the uterine origin into the tissues of the abdominal wall just above the symphysis pubis; then, placing a glass tube posterior to the uterus and into Douglas's *cul-de-sac*, they expected to have a firm support for the uterus, and one which would not permit of any relapse. Modifications of the operation consisted in first removing the ovaries and tubes, and then stitching the stumps to the abdominal wall. This operation, with certain modifications, has also been advocated for marked prolapse of the uterus. By this method of treating the displacement it is claimed there is no strain on the uterus in position, and but few, if any, relapses. Klotz leaves the tube in from three to four weeks. In the course of forty-eight hours a layer of newly organized lymph has formed around the tube, which subsequently becomes a

firm cord, made up of connective tissue, and probably adherent to the peritonæum covering the uterus, portions of the intestines, that lining part of Douglas's *cul-de-sac*, and the abdominal wall. It is claimed that the uterus is quite movable afterward. I shall not attempt to criticise the operation, but merely point out in connection with this paper one bad after-result which must take place in many cases where the tube is left in place any length of time, and that is an incurable deep sinus, which certainly is very annoying, to say the least, to many patients. On account of this result and the dangers of the operation, it does not seem, when performed in this manner, that the operation is warrantable.

Certain abdominal fistulæ which I have seen treated have actually caused their owners as much worry and discomfort as the original trouble for which the operation was done. The vitality of the tissues lining these sinuses seems peculiarly weak, and it is often an impossibility to stimulate the sinus to contract at all. Frequently, when closed up to a certain point, the tissues break down again, making the sinus as deep as before.

Dr. Mundé has recently called attention to the reflex gastric irritation "apparently produced by the tube," and cites a case with such symptoms in which the removal of the tube caused the cessation of the vomiting.

From the results already obtained, it seems quite evident that the operation of hysterorrhaphy as performed by Dr. Kelly, Dr. Sanger, Dr. Paul Zweifel, Dr. Staude, Dr. Brennecke, Dr. Wirth, Dr. Senn, and Mr. Tait—and the operation is performed most successfully by Dr. Thomas in two cases of stitching the pared surface of the fundus of the uterus to the abdominal wall—answers the same purpose and accomplishes the desired result in a much more rational way, and with the undesirable complications of the operation as suggested by Dr. Polk and Dr. Klotz. Another objection to the tube raised by Dr. Kelly, of Philadelphia, is that the uterus propelled by the intestinal movements can with ease slip either one side or the other of its prop, thus demonstrating the uselessness of the latter.

By a few operators the practice of placing drainage-tubes through Douglas's *cul-de-sac* into the vagina in suitable cases has been advocated. Except in the case of a pelvic abscess, where it is almost universally admitted that this method is desirable, I am not familiar with the results, but understand that they have not been favorable. It is certainly easier to care for the abdominal tube, and the discharge is nearly as free; moreover, it has the advantage of being constantly under one's eye. According to Thomas,* "drainage *per vaginam* by means of tubes passed up into the peritonæum is calculated to increase the dangers of ovariectomy by opening a way for putrid fluids into the pelvic cellular tissue."

To briefly formulate a rule as to the advisability of using a drainage-tube in a given case, one always errs on the safe side by adopting that given by Bantock, of England, at one of his operations in this country. When asked in what cases he was accustomed to employ drainage, he replied:

* Dr. J. W. Elliot, "Boston Medical and Surgical Journal," May 17, 1888, page 492.

† "Centralblatt für Gynäkologie," January 14, 1888.

* Thomas, "Diseases of Women," page 745.

"Whenever I have the slightest excuse and whenever I am in doubt I insert a tube."

At the present time most operators are accustomed to employ glass drainage-tubes of varying diameters, either plain or perforated by several small openings along the side. I think that the former answer every purpose, for fluid naturally gravitates to the bottom of the cavity, and the small openings in the side of the tube soon become plugged by the surrounding viscera; moreover, the intestines or a piece of the omentum are liable to be sucked into these perforations and injured on the withdrawal of the tube. As a rule, the smaller tubes are the most desirable, say three eighths to half an inch in diameter. The objections to a small tube are that it is more easily blocked at the end, and is more liable to be broken. The latter objection also applies to a very long tube. Of course, the walls of the tube should be made so thick that any ordinary force will not crack it. Soft-rubber tubes in laparotomies* are, as a rule, not as convenient or as efficacious as glass or hard rubber, as they are very liable to be compressed, thus preventing perfect drainage, are more irritating, and are not easy to keep clean and free from odor. In abscess cavities, in many cases, on account of the convolutions of the sac, they will reach the bottom where a hard-rubber or glass tube will not, and here certainly their use would be preferable. It is also the custom of some operators on withdrawing the hard tube to insert temporarily a soft-rubber and shorter tube. Single hard-rubber tubes in themselves possess no advantages over glass, except they are less liable to breakage. This accident I have heard spoken of several times, but have never known personally of its occurrence when the tube was *in situ*. I should be glad to learn of an authentic case.

Except when a collection of pus is formed, it is not at all necessary to wash out the tube when leading into the peritoneal cavity. Simply removing the accumulating contents fulfills every requirement. A single tube usually answers every purpose, and I should have entire confidence in one. Nearly all the double tubes fail to work satisfactorily, and it not infrequently becomes necessary to insert a single tube in order to secure proper drainage. In the case of sacs, or a large cavity, conditions of which I will speak later, this is not necessarily true. To assist in the demonstration of hæmorrhage, I think they are far from being as satisfactory as single tubes. Tubes made of absorbable material, as bone, are undesirable here, and are not now in use, so far as I am aware. Peaslee at one time advocated the use of a cloth tent. Its disadvantages, compared with the many manifest advantages of the glass-tube, are, I think, quite marked. Koeberlé was accustomed to use metal tubes, one entering through the abdominal wall, and one into Douglas's *cul-de-sac* through the vagina. Mikulicz and Fritzch are accustomed to use and recommend highly the use of a piece of sublimate or iodoform gauze, one end resting at the most dependent point, and the other coming out at the lower end of the incision, thus draining by capillary attraction. It is to be drawn out gradually. It certainly

does not permit of irrigation or demonstrate hæmorrhage as well as the glass tube.

My preference in most cases, with possibly the exception of those cases where we have to deal with abscess cavities, and usually these also, would be to use single-glass drainage-tubes, for the following reasons: They are the most simple kind made, are cleansed with the greatest ease, allow free drainage, their contents can be removed more easily than from any other tube, and, if necessary, they can be easily washed out. As I said before, I do not consider that perforations along the side are of any advantage.

The contents of the tube should be removed as often as every two hours, and, if the discharge removed at one time be an ounce or more, at more frequent intervals, occasionally as often as every half-hour. The first twenty-four hours after the operation the tube should be most carefully watched for hæmorrhage. I have seen marked hæmorrhage from either the stump or torn adhesions, and rendering it necessary to open up the abdominal wound in six cases, in two of which it had to be done a second time. In one of these cases a bright and watchful nurse detected the trouble by means of the pulse, no drainage-tube being used. In all the other cases, if I remember correctly, the very first manifestations were the appearance of the blood through the tube.

The removal of the fluid is easily accomplished by means of a rubber tube attached to a small glass syringe. In the absence of the syringe, a soft-rubber tube will answer the same purpose. As I have several times seen physicians puzzled how to accomplish this simple manœuvre, I will state that it is executed in the same manner that we withdraw urine in a pipette. Insert the rubber tube to the bottom of the glass tube and hold it there for a second, and then, after closing the upper end by pinching the tube with the finger, withdraw it, and nearly all the contents of the drainage-tube will be removed. I lay great stress on the frequent removal of fluid in this manner as one of the safeguards against septicæmia. It is unnecessary to emphasize the fact that the syringe or tube for the removal of the fluid should be kept in an antiseptic solution, and that one should be as careful about the condition of his hands, etc., as of the apparatus used. As the discharge diminishes, the necessity for its frequent removal ceases. The tube should be closed by a plug of absorbent cotton or gauze. Mundé protects the tube by a little wire cage, its object being "to avoid the danger of pressing on the projecting flanged end of the tube and pushing the other end against the bottom of Douglas's pouch."

Most surgeons make the mistake of leaving the tube in altogether too long. It should be removed just as soon as the discharge becomes clear serum, or ceases, and in most cases it is entirely unnecessary to substitute a soft-rubber tube. I never saw but one case where the tube was removed too early. Here an abscess, discharging very fetid pus and having formed in Douglas's *cul-de-sac*, broke the day after the tube was removed, which was done on the third day, and then discharged through the track of the sinus, showing that the abscess did not form as a result of the too early removal of the tube, but rather had formed

* "Drainage after Laparotomy," "Gynæcological Transactions," 1887.

before, the end of the tube probably having become blocked. In this case there was an escape of some of the cyst fluid into the peritoneal cavity, which probably acted as the exciting cause of the abscess. The late removal of the tube also leaves a weak point in the abdominal wall, which undoubtedly predisposes to a hernia.

Some ten months ago I had the good fortune to see such a case, a small hernia having presented at the lower end of the line of union, at the point where the patient had worn a drainage-tube. An interval of some five months had then elapsed since the laparotomy had been performed. Proper care of the drainage-tube, and frequent removal of its contents, will certainly hasten its removal, and do much in this way toward the prevention of hernia, as well as of a bad sinus.

The discharge through the tube, when no pus or septic matter has been present at the time of its introduction, usually presents the following characteristics: For the first six hours it is quite abundant, strongly colored with blood, and rather thin in consistence; it then steadily diminishes in amount, the color becomes lighter, and in from twenty-four to seventy-two hours the fluid becomes a clear serum; this grows less and less, and, if not removed frequently, soon solidifies in and around the tube, being of a jelly-like consistence. If the tube is still allowed to remain in place, the slight serous discharge gradually changes to a purulent one, apparently forming on the surface of this jelly-like fibrinous deposit, and after a time the pus increases, so that there is a steady discharge of perhaps several drachms in the course of twenty-four hours. This almost invariably happens when the tube is left in too long. When pus has once commenced to form in any amount, it is wiser to gradually draw out the tube, at the rate of an inch shortening every day or two, the result of removing it entirely in such a case being the damming up of the pus by the closure of the upper end of the sinus, and the formation of an abscess. This I have seen several times; but, as the pus always discharged through the track of the sinus before it accumulated in any amount, it did no permanent harm, except to delay the closure of the sinus.

When pus or septic material is present to start with, the tube should be gradually shortened, or until the discharge becomes serous, when it can be removed entirely.

The drainage of adherent cysts is usually accomplished by stitching the sac-wall to the abdominal wall, and tightly around a glass or hard-rubber drainage-tube. This method is followed by several annoying features. If a slight adhesive inflammation could be set up in every case, so that the opposing surfaces of the sac would unite and thus obliterate the cavity of the sac, this would be the ideal method. Unfortunately, this seldom happens. Out of ten cases which I have seen or assisted in the care of, only one apparently took this course. Here everything seemed to do nicely; there was no pus discharged from the sac—in fact, there was hardly any discharge at all. The washings all came back clear and sweet, and there was no rise of temperature. At an early date the tube was removed, and the patient was sent to her home “well.” Subsequent examination of the woman showed that the sac had probably never been en-

tirely obliterated, but only around the end of the drainage-tube; that cyst fluid had again accumulated, and that the patient was in quite as bad condition as when she first presented herself for operation. More commonly the story is somewhat different. At first we have an abundant discharge through the tube of cyst fluid, which soon becomes exceedingly offensive, especially when sloughing of the sac commences. This latter takes place in most cases. As the cyst-wall absorbs very freely indeed, the patient soon becomes a subject of septicæmia unless the sac is kept clean.

It is quite certain that a simple non-malignant and adherent cyst which has been properly drained and irrigated never need cause the death of a patient from septic absorption. Unless, however, a free and permanent opening be made, not only sufficiently large to permit free irrigation, but so large that sloughing fragments can be easily removed, it is not improbable that a fatal termination may result. It is not enough that fragments can be washed away; they should be removed before sloughing has reached that point. All sloughs and débris should be pulled or cut away as rapidly as possible. By doing this and washing frequently, the sac can be kept clean and free from odor; but this must be emphasized: the opening into the sac should be kept as large as possible.

In these cases an ordinary drainage-tube seems comparatively useless. One can stitch the edges of the sac to the edges of the wound, leaving an opening two or three inches in diameter, pack the opening with absorbent cotton or gauze, and secure ample drainage, without the trouble of a drainage-tube. There is not the slightest doubt that the opening will contract enough before the sac has entirely sloughed away, and the advantages of having this large opening are only too obvious. If it be thought desirable, a drainage-tube can be inserted, in addition, to reach some remote corner of the sac, or continuous drainage can be instituted, but with the large free opening neither are necessary. In no other way can sloughing fragments be so easily or so early removed.

It is not often that continuous drainage is desired, nor is it always easy to effect. If a Kibbee cot, or a good substitute for it, can be obtained, the problem is much simplified, as then a continuous stream of warm or medicated water may be allowed to run into the sac or wound and overflow into the cot, thence running into a tub at the foot of the bed. The overflow can usually be confined to any part of the bed by means of blankets, rolled up and placed so as to form a hollow square, covered with a rubber sheet which acts as a basin with the rolls for its edges. To keep a person quite dry and still keep up a continuous drainage is much more difficult. Here a double drainage-tube either Dr. Thomas's or Dr. Sims's, or even two plain rubber tubes, can be used to advantage. It is desirable to have the escape tube of rather larger diameter than the entrance tube, and arranged as a powerful siphon. These openings around the tubes should be plugged. The apparatus must be carefully watched, as the tubes are continually getting blocked by sloughs, etc., and as a result the water is very apt to run over into the bed. The stream of water should be very slow. When such sloughing is going on, an intermittent

and forcible stream, such as the Davidson syringe gives, is preferable, as it dislodges débris which may be adherent much more easily and quickly.

I will end this paper by indicating briefly the few points I wish to emphasize, none of which are new, but, at least concerning some, there is a decided difference of opinion, and one or two which it is self-evident many surgeons neglect:

1. A glass drainage-tube of rather small diameter and thick walls should be used in preference to all others.
2. A drainage-tube should be inserted when in doubt and when any of the causes already mentioned for its use are present.
3. A tube which is not perforated along the sides answers every purpose.
4. The contents of the tube should be removed at very frequent intervals—every half-hour to three hours.
5. One of the greatest uses of the tube is in the early demonstration of hæmorrhage.
6. A tube should be removed just as soon as the discharge becomes clear serum.
7. When a drainage-tube is left in too long a sinus remains which it is frequently impossible to close, and there is an increased liability to hernia.
8. In draining a sac, a large and free opening made at the time of operation seems preferable to sewing the sac-walls closely around a drainage-tube.

Exophthalmic Goitre.—"We may look," says the "Lancet," "to rare morbid associations of ill-understood diseases for some elucidation of their pathology. Considerable hypertrophy of the tonsils has been observed in association with hypertrophy of the thyroid, and such a connection suggests many ideas which it can do no harm to entertain, but by which we must not set too much store. Sometimes considerable mental disturbance may accompany other symptoms of exophthalmic goitre. The insane state has occasionally been of that description met with frequently in general paralysis—the expansive and grand sort. Why the right lobe of the thyroid and the right-sided proptosis should be greater than the left, supposing the observation to be true, may be dependent on other causes than a sympathetic nervous association. Though ophthalmic goitre is most frequent between the advent of puberty and the full development of womanhood, yet children and aged persons may present all its signs. Benedikt places the essential lesion in the medulla oblongata, Eichorst in the grand sympathetic, and Fillehne in the restiform body, while Charcot considers it as a general neurosis allied to hysteria, and other authors believe it to be specially related to chlorosis or anæmia."

Enema Lesions.—"Dr. Achilles Nordmann, of Basle," says the "Lancet," "has published a description of twenty-five bowel lesions due to the operation of administering enemata. They include three complete perforations and ulcers, and wounds of various depths and sizes. The causes of these lesions seem to have been the use of defective instruments, ignorance of the direction of the rectum, catching of the transverse fold on the tube, extreme irritation of the mucous membrane of the bowel, and obstructions caused by certain conditions of the uterus, the fetal head, or an enlarged prostate. As a rule, these lesions are to be found on the anterior wall of the rectum, from one to seven centimetres from the anus. They are not always easy to diagnose, as other foreign bodies or caustics may produce similar appearances. Tubercular and hæmorrhoidal ulcers may be mistaken for them; these are, however, generally higher up. A perforating wound gives rise to paraproctitis, but this is not necessarily fatal, though a stricture generally results."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JULY 14, 1888.

THE DISINFECTION OF SHIPS AND THEIR CARGOES AT
NEW ORLEANS.

THE Surgeon-General of the Marine-Hospital Service appends to a recent issue of his "Weekly Abstract of Sanitary Reports," dated June 29th, an interesting report of a series of tests of the efficiency of the methods of disinfection employed by the State Board of Health of Louisiana, as applied to ships and their cargoes, together with the personal effects of the ship's company. The investigation was made by Assistant Surgeon J. J. Kinyoun, of the Marine-Hospital Service, at the request of the Louisiana board.

Before describing the tests which he applied, Dr. Kinyoun quotes from a clear and detailed description of the processes in use, by Dr. Joseph Holt, formerly the president of the Louisiana board. Substantially, they consist in irrigating the decks and the interior of the vessel itself with a strong solution of corrosive sublimate; in subsequent fumigation with sulphur dioxide, the hatches being closed; and in the subjection of bedding, wearing apparel, and the like, to the action of dry and moist heat in a chamber of ingenious construction. Dr. Holt's description gives abundant evidence that the Louisiana board has zealously and intelligently made its fight against the introduction of the germs of disease by maritime channels; if additional testimony were wanting on this point, it is to be found in the very fact of the board's having made a request for such an investigation as Dr. Kinyoun has carried out.

Dr. Kinyoun has no fault to find with the principles on which the processes are founded, but he finds that in some respects their application is lacking in thoroughness. The solution of corrosive sublimate does not actually wet all parts of the ship and its contents that it is intended should be reached by it; the sulphur fumigation is shorn of much of its supposed efficiency by the absorption of a portion of the sulphur dioxide by the moisture present, by the union of some of it with the mercury salt, producing an inert compound, and by the insufficient length of time that the gas is kept imprisoned in the vessel; and the heat in the chamber employed for disinfecting clothing, etc., seems to be either not intense enough or not so distributed as to act adequately upon all the articles in the chamber. These inferences are founded on volumetric analyses of the air contained in ships treated by these processes and on cultivation tests with the micro-organisms of various infectious diseases, including the *Spirillum cholerae asiaticæ*, the *Spirillum Finkler-Prior*, the *Bacillus anthracis*, the *Bacillus typhi abdominalis*, the *Bacillus coli communis* of Hueppe, the *Bacillus muris septicus*, the *Bacillus pneumoniae* of Friedländer, the *Staphylococcus pyogenes albus*, the *Staphy-*

lococcus pyogenes aureus, the *Streptococcus erysipelatos*, and a micro-organism alleged by Dr. Finlay, of Havana, to be that of yellow fever. The cultivation media were blood-serum, peptone-gelatin, agar-agar, potato, and rags. Twenty-one cultivation tests were made, and in only one instance were all the organisms found to have been killed. In that instance cultivation tubes of peptone-agar-agar infected with the *Spirillum cholerae asiaticæ*, the *Bacillus anthracis*, the *Bacillus typhi abdominalis*, the *Bacillus coli communis*, and the alleged microbe of yellow fever were hung in one of the compartments of the heating chamber. In the course of sixteen minutes a dry heat of 79.4 C. was reached, and then the steam was turned on for twenty minutes.

Dr. Kinyoun suggests certain modifications of the processes which he thinks would render them sufficient for the purpose. They include the use of a large spray apparatus for applying the corrosive sublimate, and under some circumstances the postponement of the mercurial irrigation until after the fumigation with sulphur; a decided prolongation of the confinement of the sulphurous fumes within the vessel; and the diffusion of the dry and moist heat by a pressure of at least twenty-five pounds to the square inch, for which purpose a chamber of boiler iron would have to be made.

The present president of the Louisiana board, Dr. C. J. Wilkinson, states that, whatever may be the defects of the processes employed, it is certain that no case of yellow fever has developed on any vessel that has been subjected to them, but Dr. Kinyoun remarks that such an experience was not uncommon under the methods previously in vogue. We infer from the board's earnestness and from the intelligence with which its efforts are sustained by the people of Louisiana that all practicable attempts to carry out Dr. Kinyoun's suggestions will be made without delay. This investigation is but one of the results of the establishment of the Marine-Hospital Service's bacteriological laboratory, of which we lately spoke in commendation, and the community should feel under a special obligation on account of it, both to Dr. Kinyoun and to the progressive management of the service to which he belongs.

THE MEDICO-LEGAL ASPECT OF DEATH BY DROWNING.

In the Section in the Medical Sciences, at the recent meeting of the French Association for the Advancement of the Sciences, M. Brouardel and M. Loye submitted some new observations in regard to the mechanism of death by drowning, an abstract of which is given in the "Gazette hebdomadaire de médecine et de chirurgie." They remark that the period of resistance to inspiration which immediately follows the single deep breath of surprise, in cases of submersion, has been regarded by some physiologists as due to the action of the will. It has been thought, for instance, that dogs closed the glottis in order to prevent the penetration of water into the lungs. But this is not the case, for the same period of resistance is observed in tracheotomized dogs and in those that are anæsthetized. The lung possesses an expiratory force evoked by excitation of the superior laryngeal nerve, which excitation, in drowning per-

sons, is brought about by the contact of water with the mucous membrane of the larynx. A submersion of four minutes, the authors say, is required to make death certain; yet it is during the first ten seconds that the greatest quantity of liquid penetrates into the lungs—a somewhat surprising fact, they add, when it is remembered that under many circumstances an animal that has been submerged for only a minute may be resuscitated, whereas after a more protracted submersion success is not met with in laboratory experiments, although after the expiration of the minute not much more water is present than before.

The water that enters the lungs is absorbed and penetrates into the blood, where it acts as a diluent, not only before death, but also after the last respiratory effort—a fact of prime importance in legal medicine. The investigator is often called upon to ascertain whether a corpse is that of a person who has met death by drowning or that of one who has been thrown into the water after death. Inasmuch as, according to past teaching, the blood of a drowned person is liquid and not coagulated, one would decide in favor of drowning if fluidity of the blood was ascertained. It has been seen, however, that water passes into the circulatory system after the last gasp. Moreover, even in a drowned person, the blood is always found coagulated if the examination is made within a short time after death; it is found to be liquid in the right chambers of the heart and in the great vessels, but coagulated elsewhere. Fluid blood may be met with in the thoracic inferior vena cava, and clots in the abdominal vena cava. The authors have never found the portal vein containing liquid blood, but always a very solid clot.

MINOR PARAGRAPHS.

MAMMARY CANCER IN THE MALE.

Two cases of cancer of the breast in the male subject are recorded in a recent number of the "Archiv für klinische Chirurgie," one observed by Dr. Berns, of Amsterdam, and the other by Dr. Franke, of Brunswick. The history of the latter is furnished by Dr. Schuchardt, of Gotha, and abstracts of the two histories are given in the "Centralblatt für Chirurgie." Berns's case was that of a man, forty-two years old, whose breasts had attained to very great size in his youth and had quite the characters of a woman's at the time of the observation. The tumor, an alveolar carcinoma, was situated on the outer aspect of the right breast. It was removed, but returned, and, after a second operation, proved fatal by dissemination, but without involvement of the axillary glands. In Franke's case the patient was sixty-nine years old, and the tumor, which was seated in the right breast, was as large as a walnut.

IODINE IN THE TREATMENT OF DISSECTION WOUNDS.

M. LOUGE ("Gazette des hôpitaux"; "Centralblatt für Chirurgie"), founding his statements on four years' experience as prosecutor in the Marseilles School of Medicine, recommends tincture of iodine as the best antiseptic and caustic to apply to dissection wounds in order to prevent infection with cadaveric poison. He advises that all injuries of the skin of the hands should be touched with the tincture before an autopsy or a dissection is begun. When the hands are wounded during the

work, the wounds should be allowed to bleed freely, and the iodine then applied; if no bleeding takes place, it should be applied at once.

AN EPIDEMIC DUE TO SOPHISTICATED WINE.

DURING the past winter, as is recorded in the "Semaine médicale" (cited in the "Province médicale"), an epidemic was observed in Hyères, France, that was at first supposed to be one of influenza of a peculiar form. In many of the persons attacked there was paralysis of the feet or hands, preceded by pains in those parts. To cover the paralytic element of the affection, it was given the name of *grippe infectieuse*. But one of the physicians was led to suspect that the disease was due to something taken into the stomach, and systematic inquiry brought out the fact that none had been attacked but those who had used wine furnished by a particular dealer, and it was found that the severity of the symptoms was in direct ratio to the amount of the wine consumed. An investigation has been undertaken, and it is thought that the nature of the substance used in adulterating the wine will be ascertained.

STRANGULATION OF THE CLITORIS.

THE "Internationale klinische Rundschau" cites from the "Orvosi hetilap" what seems to be a unique case, observed by Dr. Bókai, of Buda-Pest, in which a girl, ten years old, tied a thread around her clitoris, causing the strangulated portion of the organ to assume the dimensions of a walnut. The thread was cut, and the furrow of ulceration that it had caused was treated antiseptically. The parts soon resumed their normal appearance, save that the swelling showed no disposition to disappear altogether, so that the knob-like portion of the organ still remained as large as a hazel-nut. It was feared that this enlarged state of the clitoris would lead to further unnatural procedures on the part of the child, and the mass was therefore removed with Paquelin's cautery.

POTENTIZED ARSENATE OF GOLD.

A CONTRIBUTOR to the "Progrès médical," Dr. Regourdin, makes some enthusiastic statements as to the manifold therapeutic virtues of arsenic—among others, that it is a "cohibent"—and likewise those of gold, the latter having been particularly recognized since the time of the celebrated Dr. Chrestien, of Montpellier, and attention having been called to them anew by the researches of Burcq and others in metallo-therapy. It seems that an English physician, Dr. Addison, has bound these two peerless remedies together in an intimate combination termed potentized arsenate of gold (*arséniate d'or dynamisé*), which is the particular preparation recommended by M. Regourdin, especially in affections of the nervous system, all sorts of cachexiæ, the majority of skin diseases, and secondary and tertiary syphilis. We are not told how the "potentizing" is accomplished, but the dose is given as from one to thirty milligrammes.

THE WILLARD PARKER HOSPITAL.

THE Report of this institution for the quarter ending June 30, 1888, shows that 152 patients were admitted, making, in addition to 26 patients who were in the hospital at the beginning of the quarter, a total of 178. Of this number, the Report states, 118 were discharged and 35 died. Of the deaths from scarlet fever, 82·35 per cent. occurred in children under five years of age, 42·9 per cent. of the number being complicated with diphtheria. According to the Report, a comparison of these statistics with those for the corresponding quarter in 1887

shows that there were admitted during the past quarter 48 cases more of scarlet fever and 46 of diphtheria, making a total increase of 94 cases. During the first quarter of the present year there were 21 cases less of scarlet fever and 20 cases less of diphtheria admitted than during the past quarter, which exhibits an increase in admissions over any like period since the hospital was opened, and a total number of cases only 9 less than were admitted during the year 1886.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 10, 1888:

DISEASES.	Week ending July 3.		Week ending July 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	6	1	8	5
Scarlet fever.....	118	22	77	19
Cerebro-spinal meningitis....	6	5	5	2
Measles.....	236	20	195	22
Diphtheria.....	102	32	103	32
Small-pox.....	4	1	0	1

The Marine-Hospital Service.—At the recent session of the Examining Board there were 21 applicants. Of this number, 4 were rejected on account of physical disability, 3 withdrew their names, and 6 successfully passed the examination.

The New York Polyclinic Hospital.—The Faculty of the New York Polyclinic have decided to increase the clinical facilities of this institution by establishing a spacious hospital immediately connected with the college building. It will be opened for the reception of patients in October next.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 1 to July 7, 1888:*

BAXTER, J. H., Colonel and Chief Medical Purveyor, will proceed to New York city on public business connected with the Medical Department, and on completion thereof will return to his station in Washington city. S. O. 150, A. G. O., June 29, 1888.

BENTLEY, EDWIN, Major and Surgeon. Relieved from active service, July 3, 1888, by operation of law. S. O. 153, A. G. O., July 3, 1888.

JOHNSON, RICHARD W., Captain and Assistant Surgeon. Designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, New York (near New London, Conn.), on the 2d of July, 1888, and to continue during the months of July, August, and September; and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Division of the Atlantic, June 28, 1888.

CROSBY, WILLIAM D., First Lieutenant and Assistant Surgeon. Leave of absence extended one month. Par. 8, S. O. 151, A. G. O., June 30, 1888.

CLENDENIN, PAUL, First Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 59, Department of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 7, 1888:*

CRANDALL, R. P., Assistant Surgeon. Detached from the U. S. Steamer Saratoga and ordered to the U. S. Steamer Galena.

PECK, GEORGE, Medical Director. Placed on the retired list on the 9th instant.

Society Meetings for the Coming Week:

MONDAY, *July 16th*: Hartford, Conn., City Medical Association.

TUESDAY, *July 17th*: Ogdensburg, N. Y., Medical Association; Medical Society of the County of Otsego (annual—Cooperstown), N. Y.

THURSDAY, *July 19th*: New Bedford, Mass., Society for Medical Improvement.

SATURDAY, *July 21st*: Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

A. Y. P. Garnett, M. D., of Washington, D. C., died at Rehoboth Beach, Del., on Wednesday, the 11th inst., in the sixty-eighth year of his age. He was born in Essex County, Va., and was graduated from the University of Pennsylvania Department of Medicine in 1841, in which year he was appointed an assistant-surgeon in the United States Navy, in which he served until 1848, when he settled in Washington. At the outbreak of the civil war he entered the Southern army as surgeon, returning to Washington at the close of the war. From 1858-'61 and 1866-'70 he was professor of clinical medicine in the National Medical College of Washington. In 1870 he was appointed emeritus professor, which position he held at the time of his death. He took an active part in organizing the Ninth International Medical Congress, and was elected president of the American Medical Association in 1887.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of May 3, 1888.

The President, Dr. A. JACOBI, in the Chair.

Studies on the Sweat-Glands.—Dr. A. R. ROBINSON read a paper in which he gave a brief description of the sweat-glands, and then proceeded to discuss some disputed points connected with their structure and function. The sweat-glands, or coil-glands, were present in the skin of all parts of the body except the glans penis and the margin of the lip. They were most numerous in the palms of the hands and the soles of the feet, where, according to Krause, they numbered twenty-seven hundred to the square inch. They extended from the free surface upon which they opened to the lowest part of the corium or into the subcutaneous tissue, and consisted of two parts, the gland proper, or secreting part, and an excretory duct. The gland proper was the most deeply seated, consisting of the lower portion of the sweat apparatus coiled upon itself, the tube terminating in a blind extremity. The remaining portion constituted the excretory duct. As it passed through the corium it pursued a straight or slightly wavy perpendicular or oblique course, and entered the epidermis through an interpapillary process of the rete. The direction of the tube through the rete was either straight or spiral. In the corneous layer it pursued a more or less spiral direction, according to the thickness of the layer, *as a rule*. Within the epidermis the tube consisted of a canal lined, according to some, by a bright homogeneous membrane and surrounded by the epithelia of the part. Within the corium the duct was lined by a homogeneous bright membrane, called the cuticula; outside of this there were

epithelial cells, and outside of them there was a delicate membrana propria. The gland proper was usually divided into a proximal and a distal section, the former, about one third or one fourth of the coiled tube, having the same structure as the duct, but being coiled and having the lumen larger. In the distal part there were unstriated muscle fibers outside the epithelium, and, according to some, the cuticula was there wanting. The gland was surrounded by a somewhat loose, fibrous, connective tissue, and this tissue was present between the coils of the tube. The glands were specially and richly supplied with blood-vessels. The sweat-glands were supposed by some to be sweat-producing and fat-producing organs, and by others to form fat only, for lubricating the general surface, while the sebaceous glands, which had formerly been believed to be the source of the fat found on the general surface, only oiled the hair.

The results of the author's studies, so far as they differed from those commonly recorded, were as follows: Kölliker and others had stated that the sweat-glands began to form at the fifth month of foetal life. In the case of a foetus of the eleventh week, the author had made sections of the end of the index finger, where he found sweat-glands so far formed as to warrant the opinion that their development must have begun a week previously. He thought other observers had not discovered them at this early period, because they had failed to examine at the end of the finger, but rather on the middle of the finger or in the palm, where they developed later. It had also been stated that the coil and lumen did not form until the sixth or seventh month. He had found them formed in the end of the index finger at four months and a half. He had also, in some of them, found the lumen communicating with the free surface at this period instead of at the seventh month, as stated by others. The formation of the lumen had been described as a breaking down of epithelia. He had been unable to verify this assertion; according to his observations, the lumen was formed by a process of secretion, the product collecting between the cells. No permanent cuticula existed in the secreting part of the gland. The cuticula, in the localities where it existed, was not composed of endothelia. It was often present in the epidermis as far as the granular layer, and consisted of the chemically changed internal part of the epithelia. But one row of epithelia lined the excretory duct until the rete prolongation was reached. The muscular layer was not derived from epithelium, as maintained by Ranvier; it was situated between the membrana propria and the epithelium, when forming a continuous layer, and when the fibers were isolated a few might be in the capsule.

The general view of the function of the sweat-glands was that they secreted sweat, but this view had lately been strongly combated, especially by Unna. That they, instead of the sebaceous glands, produced the fat necessary to keep the general surface oiled, seemed very probable for the following reasons: The fat from the sebaceous glands was contained principally in cells, and was deposited on the corneous layer of the hair-follicle orifice, while the fat from the sweat-glands was free, and could be used by the corneous layer. The palms of the hands and soles of the feet had no sebaceous glands, yet those parts were oiled. In the coil lumen there were found albuminoid or mucoid substance, cell detritus, fat drops, and pigment granules, and there were two million sweat-glands in the body, while there were only one hundred thousand sebaceous glands, of which eighty thousand were on the scalp, leaving but twenty thousand to furnish fat for the entire surface. As the amount of free fat produced by a single sweat-gland was very considerable, as was readily shown by microscopical examination, there seemed to be no doubt that they were the organs which furnished the oil for the skin, and that the disease called sebor-

rhœa oleosa was probably not an affection of the sebaceous, but of the sweat-glands—a hyperidrosis oleosa, as first pointed out by Unna. In the fœtus the glands were fully developed before birth, as fat was needed for the body, which swam in water, but surely the fœtus did not sweat. Finally, in the dog, sweat-glands were well developed and opened into the hair follicles, but the dog did not sweat on the general body. Such were the arguments used by Unna, who believed that the sweat came from the blood-vessels of the papillæ and that it reached the surface by way of the coil-duct. In opposition to this view it might be said that persons sweat most on those parts of the body most richly supplied with glands; but there also was the best opportunity for the escape of liquid from the papillary blood-vessels. But the process seemed to be one of secretion, and gland tissue was necessary. That the glands were not merely fat-forming organs was shown by the presence of urea, uric acid, lactic acid, and oxalate of calcium in certain forms of disease. Sweat secretion was aided by vascular dilatation, and some of the fluid probably came by a transudation process from the blood-vessels of the papillæ; but sweat could form when the blood-vessels were not dilated, and certain experiments showed that there were special nerves in the sweat-glands which governed sweat secretion independently of the blood-pressure and circulation, although not of blood-supply.

The author here discussed certain pathological conditions in their bearing upon the physiology of the sweat-glands. He described lichen tropicus, which was associated with excessive sweating, and showed that the sweat-coil gave anatomical evidence of physiological activity. He further described a cystic disease of the sweat-glands, the cyst being situated in the corium and containing pure sweat, which, hence, must have come from the coil part. These two diseases showed that the sweat-glands secreted sweat. In conclusion, he described a catarrhal inflammation of the sweat-gland coil with clinical characters somewhat like those of an eczema or the dysidrosis of Tilbury Fox.

Meeting of May 17, 1888.

The President, Dr. A. JACOBI, in the Chair.

Pleurisy as a Predisposing Cause of Phthisis.—Dr. B. F. WESTBROOK, of Brooklyn, read a paper with this title. (See volume xlvii, page 617.)

Some Determining Causes of Pleural Exudates.—Dr. H. F. WILLIAMS, of Brooklyn, discussed this subject, and in the course of some general remarks spoke of pleurisy as either sthenic or asthenic. That pleurisy might be provocative of phthisis was a view which he thought would be accepted without a dissenting voice. He submitted for consideration by those who wished to treat pleurisy successfully three determining causes of pleural exudates:

1. Hereditary or constitutional temperament, with demonstrated richness of cell proliferation in inflammatory products with proneness to organization. The subject of such a pleurisy would have the pleural surfaces covered with false membrane out of proportion to the exciting cause.

2. Early pulmonary immobility, regional or entire, not the circumscription of pulmonary movement by pleural disease, but antedating this, commencing perhaps in fœtal life.

3. Constitutional infection by the *Bacillus tuberculosis*, the germ finding the weakest spot at the pleura rather than in the meninges or elsewhere. Healthy blood formed an impregnable barrier to tubercular invasion.

Dr. J. BLAKE WHITE continued the discussion in a brief paper in which he said it had been established that pleurisy not only frequently occurred in those having phthisis, but might give rise to phthisis in persons previously healthy. Pleuritic

adhesions following sero-fibrinous pleurisy were too often overlooked until attention had been attracted by a dry, hacking cough and progressive emaciation—a stage at which, in the majority of cases, the lesions had become irreparable. The question of preventing as well as curing phthisis depended more upon an increase of lung capacity, especially about the apices, than on purity of air or bacilli. Regular systematic lung exercise in children with rachitic manifestations, together with judicious diet, would do much to prevent phthisical tendency and chest deformity in advanced life. Regular forced expirations and inspirations formed one of the best means of ridding the lungs of infiltrating products and removing pleuritic adhesions. The speaker said that the views expressed by him might appear somewhat opposed to the microbic origin of phthisis. He was not prepared to accept that teaching, for all his experience with the disease tended not only to confirm what he had said, but also to place the bacillus as the result of the phthisical process.

Treatment of Predisposition to Phthisis in Children who have had Pleurisy.—Dr. W. B. WOOD, in discussing this subject, said that between the condition of no disease and the time of well-developed phthisis lay somewhere that border-land, predisposition—a condition which was not phthisis, but which might be recognized and successfully treated, and which, if unrecognized and untreated, would ultimately become phthisis. The first physical manifestation of predisposition to phthisis was diminished breathing power, deficiency of respiratory function. Two great causes of deficient respiratory function in children were impeded nasal respiration and thickened and immobile pleura at the base of the lungs. Any treatment which would successfully overcome these conditions, constituting predisposition, would, in a vast majority of cases, effectually prevent the development of phthisis in children. The treatment would have to consist in securing free nasal respiration by treatment of the nose and by a system of lung gymnastics. The history of most cases of phthisis in children, when reliable, contained evidence of earlier deficiency of nasal respiration or deficiency of lung expansive power caused by pleuritic disease.

Dr. E. T. BRUN, of Philadelphia, was asked to open the general discussion. He said that from time immemorial the view had been entertained that pleuritic disease had considerable bearing upon the development of phthisis. But during the last few years much study had been devoted to the question whether the conditions which caused the phthisis had not been the cause of the pleuritic process. In addition to the evidence already published, he cited two cases which had come under his observation during the past year, in one of which extensive pleuritic adhesions over the entire chest had been present, and, although the microscopic sections had demonstrated the characteristic anatomical changes denominated tubercular, there had been no lesion whatever in the lungs. The fact that patients with pleurisy often recovered did not go to prove that the process was not tubercular, for we often saw complete recovery from tubercular peritonitis, where we might suppose the conditions were less favorable. Sir Andrew Clark had expressed the belief that these cases of pleurisy were simply inflammatory, but that had been at a time when less was known about the microbic origin of phthisis. It seemed to the speaker that the cases in which absorption of fluid from the pleural cavities did not take place were usually those in which it was sacculated, and he had come to look upon tapping as rather unsatisfactory, and resorted to it only in dyspnoea or other urgent conditions. It was in persons of the tubercular or scrofulous diathesis or enfeebled constitution that special attention should be given to preventing the development of phthisis following pleurisy. He could do no better than repeat Sir Andrew Clark's words on this subject: "We should not try to develop the chest too much, and at the

same time fail to fortify the whole body. Physicians often devote too much attention to developing respiratory capacity to the neglect of the general condition."

Dr. F. C. SHATTUCK, of Boston, said that about three years ago he had written a note to Strümpell's "Text-book of Medicine" to the effect that the experience of physicians in America was not like that of the Germans, who, according to Strümpell, found pleurisy due to cold only in very rare instances. He had given as his reason for the statement that here so many patients with pleurisy entirely recovered. Since then his views had undergone a marked change. Facts seemed to be pointing to the stand taken by some Continental writers that pleurisy was always due to tuberculosis. We were in the habit of associating in our minds tuberculosis and an unfavorable or fatal prognosis, because formerly only tuberculosis pulmonalis had been recognized, and then only when going on to a fatal issue. But we had learned that local tuberculosis frequently existed and was recovered from, whether in the pleura or elsewhere. It was true that the tubercle bacillus had not always been found in the pleuritic effusion or on the surfaces of the membranes, but that was only negative evidence and could not be regarded as of weight when it was remembered that in the most favorable cases for finding the bacilli the search was tedious. Nor was our inability to account for the arrival of the germs at the pleural cavities an argument of value against the microbic origin of the disease. The best possible form of pulmonary gymnastics was mountain climbing.

Dr. E. G. JANEWAY thought that the study of the relationship between sero-fibrinous pleurisy and tuberculosis was a difficult one. If within a few months, or even a year, after sero-fibrinous pleurisy he were to find evidence of tuberculosis he would be very much inclined to believe with Dr. Shattuck that the tuberculosis preceded in the pleura or was already present in the lung, although undemonstrable, and was directly or indirectly the source of the pleurisy, rather than that the sero-fibrinous pleurisy had produced the pulmonary tuberculosis. Autopsies went to confirm him in this belief. One was struck at the frequency with which he found at autopsies tubercles in the pleura in cases that he had supposed from clinical observation to be those of simple pleurisy. He had seen cases of pleurisy in the rheumatic in which other forms of infection could be excluded. As to treatment, when the effusion failed to be absorbed, there was a method which had often proved successful after repeated paracentesis had failed. It consisted simply in limiting the amount of fluids taken to one third or one half the amount of urine passed, at the same time giving iodide of potassium and salt in sufficient quantity to make the blood thirsty for fluid. In febrile cases the patient should be kept quiet. The speaker had lately seen three cases which had shown the difficulty of arriving at the facts regarding the presence or absence of the tubercle bacillus in seeking to establish the diagnosis.

Dr. WESTBROOK said that he had written his paper from a clinical rather than a pathological standpoint. He had simply expressed his belief in the probability, perhaps he should have said the possibility, that there were cases of primary non-tubercular pleurisy which stood in the relation of a predisposing cause to phthisis pulmonalis in affecting the lungs in such a way as to render their tissues favorable to the development of the tubercle bacillus. As to the question whether the pleurisy was tubercular or not, he was entirely unable to express an opinion upon it, although he had read the literature on the subject. The evidence had not been at all conclusive to his mind that pleurisy was always tubercular, or that the pleura, of all the tissues of the body, should become inflamed only under the influence of infection.

Book Notices.

Lectures on Certain Diseases of the Jaws. Delivered at the Royal College of Surgeons of England, 1887. By CHRISTOPHER HEATH, F. R. C. S., Hunterian Professor of Surgery and Pathology in the College; Holme Professor of Clinical Surgery in the University College, London, etc. Sixty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888.

MORE than twenty years have elapsed since Mr. Heath published his well-known work on "Injuries and Diseases of the Jaws, including the Antrum," being the Jackson Prize Dissertation for 1867, a second edition of which was issued in 1872. The present volume is the result of further studies on the same subject.

The first lecture deals with diseases of the antrum—suppuration, polypus, etc.—and cysts connected with the teeth. The author draws attention to the fact that "it does not require the development of a cyst to render a misplaced tooth important, for there are many recorded instances in which mere displacement of a tooth from its normal position has given rise to deformity and the suspicion of grave disease."

The second lecture treats of tumors of the jaw. The author first records cases of a rare form of odontoma in which an irregular mass of dental tissue, in no way resembling a tooth in shape, is formed. Fibrous epulis, fibroma, enchondroma, osteoma, sarcomatous tumors, epithelioma, and that rare disease, actinomycosis, are then considered.

The third lecture is devoted to diseases of the "temporo-maxillary articulation and closure of the jaws."

The volume deals only with the clinical aspect of the subject, and is therefore an extremely valuable book. It is illustrated with sixty-four woodcuts, showing the amount of deformity to the face that these tumors produce, and the appearance of the parts involved in disease after their removal. One can not read the volume without feeling that Mr. Heath has added much to his former work.

A Treatise on Dislocations. By LEWIS A. STIMSON, B. A., M. D., Professor of Clinical Surgery in the University of the City of New York, etc. With One Hundred and Sixty-three Illustrations. Philadelphia: Lea Brothers & Co., 1888. Pp. xx-17 to 539. [Price, \$3.]

THIS volume forms the second part of a work upon fractures and dislocations, the first portion having been issued five years ago, and exhibits the same thorough and painstaking study and investigation that characterize all the author's writings. It is a work on which the writer has expended a great amount of time and labor in consulting not only all previous treatises on dislocation, but also all reports of cases bearing upon this subject scattered through the files of foreign and domestic medical journals. He informs us in his preface that, so far as possible, he has gone to original reports and has subjected them to a careful scrutiny. "This has resulted in the rejection of some cases and in the transfer of others to different groups. A number of errors—some of long standing and wide circulation—have been corrected."

The volume is divided into three parts. The first treats of traumatic dislocations in general; their ætiology and mechanism; the pathological anatomy in recent dislocations; complications; the process of repair after reduction; the pathology of unreduced dislocations (ancient); symptoms and diagnosis; course and prognosis; treatment; and, finally, the accidents that may be caused by attempts to reduce a dislocation. Part second treats of congenital and spontaneous dislocations, while part third is

devoted to the special dislocations of individual joints. The volume is a book mainly of facts, and as far as these go it is beyond criticism; only when the author draws inferences and maps out a line of treatment is criticism possible. But even here the deductions are so convincing and the line of treatment so judicious that we hesitate to find fault. We are rather surprised at the results of operations for the correction of old unreduced dislocations of the hip, especially after arthrotomy. We know of at least three cases where a good result has been obtained by cutting down and dividing all the muscles which opposed a return of the head of the femur into the acetabulum, and a straight and useful limb obtained, although with some shortening.

The author has given in foot-notes on each page his authority for all cases referred to, so that the volume not only forms a complete treatise, but contains a bibliography of cases of this class of injury to joints. It is illustrated with one hundred and sixty-three cuts, all of which are good and to the point. We can not close this notice without congratulating Dr. Stimson upon the completion of his work, as well as on the thorough manner in which it has been done. It will long remain an authority on this class of joint injuries.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M. D., F. R. C. P., Assistant Professor of Clinical Medicine in University College, London, etc. American Edition, issued under the Supervision of the Author, and containing all the Material of the Two-volume English Edition, with some Additions and Revisions. With Three Hundred and Forty-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xx-25 to 1357. [Price, \$6.50.]

CLEARNESS of thought and language, a wealth of personal information concerning the topics under discussion, together with a thorough mastery of the most recent researches in the department of neuropathology and nerve-therapeutics, characterize this work as one of the very best ever presented to the English-reading public. The leading morbid types of nervous disease are discussed with comprehensive skill and directness, while numerous minor forms of nerve disturbance, mentioned only in quite recent papers and monographs, receive the same careful attention and add to the interest and value of the manual. The book begins with diseases of the peripheral nervous system, preceded by a general introduction on symptomatology. Then come diseases of the spinal cord; next diseases of the brain; and lastly general and functional diseases of the entire central nervous system. There are admirable chapters on the anatomy and physiology of the cord and brain, furnishing to the student or clinician concise descriptions of rare excellence. The nicest discrimination and an absence of prejudice are almost everywhere manifest in the treatment of each particular subject. According to its merits it is judged and not by the light of special study or experience. One great charm about the book—and it has many—is the author's thoroughly dispassionate attitude. There is no great nor small—only truth according to investigation. An exception to this broad statement exists in the slighting—just a little—of functional nervous diseases. Our national neurasthenia is dismissed with but a page, and its existence as a clinical entity denied. This challenges the conviction and criticism of those thoroughly familiar with the form of nervous trouble too frequently seen in America. To the general and to the special student Gowers's manual is equally valuable. The mass of detail is of the greatest possible advantage to the former, while to the specialist the manual recommends itself as an unfailing book of reference. Medical literature at large has been enriched by this recent acquisition. The volume is at once helpful and profound, vast in scope, philosophic in its grasp, and

clear in minute particulars. It takes its place quite naturally as an English classic and an ultimate authority upon matters neurological.

BOOKS AND PAMPHLETS RECEIVED.

The Ethics of Marriage. By H. S. Pomeroy, M. D., Boston. With a Prefatory Note by Thomas Addis Emmet, M. D., LL. D., New York, and an Introduction by Rev. J. T. Duryea, D. D., of Boston. Also with an Appendix showing the Laws of most of the States and Territories regarding Certain Forms of Crime. New York: Funk & Wagnalls, 1888. Pp. xxxi-33 to 197.

The National Formulary of Unofficial Preparations. First Issue. By Authority of the American Pharmaceutical Association. Published by the American Pharmaceutical Association, 1888. Pp. ix-176.

Nature's Hygiene: a Systematic Manual of Natural Hygiene, containing a Detailed Account of the Chemistry and Hygiene of Eucalyptus, Pine, and Camphor Forests, and Industries connected therewith. By C. T. Kingzett, F. I. C., F. C. S., Past Vice-President, Society of Public Analysis, etc. Third Edition. London: Baillière, Tindall, & Cox, 1888. Pp. xii-439.

Medical Expert Testimony. By F. H. Darby, M. D., Morrow, Ohio. [Reprinted from the "Transactions of the Ohio State Medical Society," 1887.]

An Experimental Contribution to Intestinal Surgery, with Special Reference to the Treatment of Intestinal Obstruction. Read in the Surgical Section of the Ninth International Medical Congress. By Nicholas Senn, M. D., Ph. D., Attending Surgeon to the Milwaukee Hospital, etc. [Reprinted from the "Annals of Surgery."]

McGill University Annual Calendar, Faculty of Medicine. Fifty-sixth Session, 1888-'89.

Fracture of the Spine: its Immediate Treatment by Rectification of the Deformity and Fixation by Plaster-of-Paris Jacket. By Herbert L. Burrell, M. D., etc. [Read at the Annual Meeting of the Massachusetts Medical Society, June 7, 1887.]

Cocaine Dosage and Cocaine Addiction. By J. B. Mattison, M. D., Brooklyn, N. Y. [Read before the Medical Society of the County of Kings, February 15, 1887.]

Medical Department of the University of Georgia. Annual Announcement of the Medical College of Georgia, with a List of Graduates from 1829 to 1888. Augusta, Georgia. Session of 1888-'89.

Forty-second Annual Announcement of Starling Medical College, together with Catalogue and Order of College and Hospital Exercises for the Session of 1888-'89. Columbus, Ohio.

Abortive Treatment of Typhoid Fever. By L. D. Woodbridge, M. D., of Williamstown, Mass. [Reprinted from the "Journal of the American Medical Association."]

The Annual Report of the Department for the Insane of the Pennsylvania Hospital for the Year ending Fourth Month 21st, 1888. Presented to the 137th Annual Meeting of the Managers of the Pennsylvania Hospital.

Fever: a Clinical Study. By T. J. MacLagan, M. D. London: J. & A. Churchill, 1888. Pp. 166.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

Retinoscopy.—Baker ("Amer. Jour. of Ophth.," Oct., 1887), in teaching retinoscopy, usually selects for examination a person with emmetropic eyes, and dilates the pupil with cocaine. His ophthalmoscope is furnished with two mirrors attached by means of a screw—one large mirror of 24 inches focus for making examinations by the indirect method and for retinoscopy, and one small mirror placed at an angle of the usual focus for direct examinations. The patient is placed with his back to the light, and the student opposite, at a distance of three or

four feet. The light is then reflected into the eye of the patient, and the mirror is rotated from side to side slowly and the red reflex carefully watched, in order to see the slight shadow moving across the red disc. The mirror is then rotated in the vertical meridian until the shadow is seen again. A +D 1 glass is then placed in a spectacle-frame in front of the eye examined. No shadow is then seen. A plus lens is then introduced, and the shadow is again seen and the direction in which it moves is noted. With a plus lens the shadow moves in the opposite direction to that in which the mirror is moved, and with a minus lens it moves with the mirror. The +D 1 lens is left in to neutralize the shadow in emmetropia, because with a mirror of 24 inches focal distance the rays of light do not cross before reaching the observer, and an erect image of the illuminated and shaded portion of the retina is obtained exactly as when a plane mirror is used. By means of ordinary trial lenses it is easy to measure the amount of refractive error. If the shadow moves with the mirror, concave lenses must be placed in the spectacle-frame until the shadow is neutralized, and the number of lens required will indicate the amount of myopia. If the shadow moves opposite to the direction in which the mirror is moved, convex lenses are used until the shadow is neutralized, and the lens required to neutralize the shadow will indicate the amount of hypermetropia. In cases of simple astigmatism no shadow will be seen in one meridian, and a shadow moving with or against the mirror in the opposite meridian. By neutralizing this shadow with the appropriate lens it will indicate the number of the cylindrical lens required to correct the astigmatism. In cases of compound astigmatism it will be necessary first to correct the meridian with the least error of refraction. Retinoscopy does not require any expensive apparatus. It is more easily performed than ophthalmoscopy by the direct method. It is more accurate as a means of correcting errors of refraction than the examination by the upright method, and the examination is made as quickly as with the optometer. The examination can be made without the assistance of the patient, and is especially valuable in cases of toxic amblyopia and in nystagmus.

Anophthalmia.—Collins ("Roy. Lond. Ophth. Hosp. Rep.," xi, 4) gives the results of an examination of twelve cases of anophthalmia, which gave rise to the following interesting questions: 1. Does an eyeball in a very rudimentary state exist far back in the orbit, so small and mobile that it can not be detected by sight or touch, or are they cases of true anophthalmia? 2. What is the condition of the optic nerves and brain in these cases? 3. What is the cause of this malformation? Do maternal impressions or frights during pregnancy have anything to do with it? In nine of the cases the examination showed that no primary optic vesicle had budded out from the anterior primary encephalic vesicle, or, having budded out, it had failed to form a secondary optic vesicle. Hence some disturbance affecting the development of this anterior primary encephalic vesicle is one cause of anophthalmia. Therefore the exciting cause must occur very early in the course of pregnancy.

Some of the Forms of Congenital and Infantile Amblyopia.—Nettleship (*ibid.*) thinks that in every case of infantile blindness it is important to observe the shape and size of the cranium and the condition of the fontanelles and sutures; to inquire fully into the question of congenital syphilis and of any acute illness the child may have had; of defective sight or intellect or other cerebral or spinal disease in any kinsfolk; and of consanguinity of parents. One group of cases contains certain rare cases of infantile blindness from gross disease of the chorioid, with swelled cranium, premature closure of fontanelles, and ridging of sutures, but without evidence or history of hereditary syphilis or other assignable cause. In another group may be classed all such cases as give a history of meningitis at a very early age. Some of these patients recover more or less perfectly without either papillitis or marked atrophic changes. Fluid pressure in the ventricles does not offer a probable explanation of the defective sight in these cases, since there is no proof of any great increase of cerebral fluid; and if there were such pressure it would not account for the sight being worse in one eye. On the other hand, in ordinary chronic hydrocephalus, where the chiasm must be considerably pressed upon by fluid in the distended third ventricle, blindness with optic atrophy, though well known, is not common. In another group of

cases the blindness is not due to either syphilitic or other chorioiditis, or to disease of the optic nerves from meningitis. In many of these cases idiocy or defective intellect is present. This group is not a homogeneous one, for some of the patients were congenitally microcephalic, idiotic, and blind, while in a few both brain power and sight were lost by disease coming on after birth. In cases of infantile blindness with little or no ophthalmoscopic change the absence of a history of meningitis is usually unfavorable to a recovery of sight. In another group of cases a form of disease exists which is closely allied in pathogeny to true retinitis pigmentosa, but differs from it in several important points. In this malady the night-blindness is stated to have been present from earliest childhood, seems to be stationary, and does not appear to have the same pathological relations as the other disease, and none of the patients are deaf. The ophthalmoscopic appearances are different from and much less conspicuous than those seen in the common disease, consisting chiefly in irregularity of the pigmented epithelium, and the presence of scattered, minute white dots. In still another group day-blindness exists. The patients are always amblyopic and color-blind, usually for all colors. Their difficulties are dated from birth and are stationary. There is no great preponderance of either sex. Consanguinity is very common. The ophthalmoscopic changes are quite inconsiderable. High errors of refraction are not usual. In a final group of cases the defect of sight, without any sign of disease, is confined to one eye. There is no evidence that the defect is recent, unless the case proves to be retrobulbar neuritis, hysterical amblyopia, or damage to the optic nerve from injury to the orbit or head. The direct reflex action of the pupil is natural, while it is more or less interfered with in retrobulbar neuritis and injury of the optic nerve. The defect of vision may be trivial or so great that only large objects are seen. It may be remediable by glasses, in which case there is almost always anisometropia, and the defective eye is nearly always the more ametropic of the two; or only partly remediable by glasses, or glasses may not help at all. There may be a history of convergent squint which has been cured by operation or has disappeared without treatment. In others convergent or divergent squint of the amblyopic eye is still present. In the absence of proof of cases of decided amblyopia of one eye without anisometropia there is ground for accepting the theory that the amblyopia commonly met with in squinting eyes is in some way the result of the squint. On the other hand, the indirect evidence is all against the suppression theory and in favor of the defect being congenital. The amblyopia of squinting eyes can not be properly considered without reference to the function of binocular vision. Since the latter varies in its perfection, and may even be entirely wanting, though each eye separately sees well, the functional association of the two eyes with each other is by no means always so developed as it is often assumed to be.

A Case of Chronic Progressive Ophthalmoplegia Externa, with Description of Ganglion-cell Groups in the Region of the Oculo-motor Nucleus.—Westphal ("Arch. f. Psychiatrie," xviii, 3) reports an interesting case of this kind occurring in a man, aged forty-four, who first was seen in September, 1882, and who died in October, 1883. The father had given signs of mental deterioration before the age of forty-three, and a sister was emotional and quarrelsome. In 1876 the patient had what was probably syphilis, and from this dated his weakness, emaciation, and loss of vision. On one occasion he had remained unconscious for three days, and in 1881 he had a similar attack and was paralyzed in the right arm. In a third attack he was also paralyzed on the right side. For six months he had suffered from delusions. When Westphal saw him he had marked ptosis of the left eye, the left pupil contracted and inactive, marked divergent squint, and complete absence of ocular movements in all directions. Eccentric vision of both eyes good. Right eye, vision normal; left eye, vision $\frac{3}{8}$. In February, 1883, both papillæ were pale, and vision in left eye was $\frac{3}{8}$. Visual field normal. Both eyes motionless. Speech was blurred, nasal, and monotonous. The palate movements were deficient, the sensibility of the face was much diminished, the taste was uncertain, and the smell very defective. Gait fairly firm, left knee-jerk just perceptible, and right knee-jerk absent. Incontinence of urine. His mental condition deteriorated steadily, and he died in October, 1883, from œdema of the lungs. At the autopsy the pia mater on the convexity was found œdematous and thickened, and contained on the lower surface of the pons and

medulla a thin, fresh clot. The sixth nerves were reduced to thin gray threads and the third nerves diminished in diameter two thirds. From the dorsal region downward there was gray degeneration of the posterior columns of the cord. The oculo-motor nucleus showed advanced degeneration. Dorsally from the atrophic oculo-motor nucleus and as far as the posterior commissure in the column of the nucleus there was a group of ganglion cells lying on each side of the rhaps, oval and partly oblique to the rhaps. On the level of the upper extremity of this group, but laterally on each side, was a second oval group. The two last groups were separated by a band of fine nerve-fibers passing downward to the crista of the crus cerebri. This band widened out above, and with the rhaps completely surrounded the median group of cells. The nucleus of the fourth nerve showed no degeneration of its ganglion cells, but a diminution in its smaller cell groups. The roots of the nerve and its terminations in the superior oblique were greatly degenerated. The nucleus and trunk of the sixth nerve showed extreme atrophy. In the optic nerves there was a thickening of the connective-tissue septa, extending to the finest subdivisions. There was degeneration of the posterior columns of the spinal cord throughout their entire length. The bundle of fine fibers separating the two groups of cells above referred to evidently sprang from the cells of the groups and passed downward as root-fibers, and this makes it probable that the cell groups give origin to oculo-motor fibers. The cell group ordinarily known as the oculo-motor nucleus was almost entirely degenerated, and the external ocular muscles were all more or less degenerated likewise. On the other hand, the median and lateral cell groups were healthy, as were also the internal ocular muscles, and hence it may be inferred that these internal muscles are innervated by the cell groups in question.

The Tarsorhepial Operation for the Cure of Trichiasis.—Van Millergen ("Ophth. Rev.," Nov., 1887) describes his operation as follows: The intermarginal space is split from end to end sufficiently to produce a gap 3 mm. in breadth at the central part of the lid, and gradually becoming narrower toward the canthi. The gap is kept open by sutures passed through folds of skin on the upper lid, by means of which the lid is prevented from closing for twenty-four hours. As soon as the bleeding has ceased, a strip of mucous membrane of the same length as that of the lid, and 2 or 2½ mm. broad, is cut out from the inner surface of the lower lip and placed at once in the gap at the intermarginal space. It should be pressed *in situ* with a pledget of cotton soaked in sublimate solution. Sutures are superfluous. The lid operated on is then covered with a flap of linen coated with a thick layer of iodoform vaseline, and this is covered by a layer of cotton. Both eyes should be bandaged, and the bandage should be renewed once in twenty-four hours. The sutures in the upper lid must remain for two or three days.

On Sensory Disorders in Diseases and Changes in the Field of Vision in Menstruation.—Tinkelstein (*ibid.*) has found that in *epilepsy* the fields of vision undergo a general concentric narrowing under the influence of the fits. There are two varieties of the constriction: a more or less regular or equal narrowing of both halves of the field, and a more or less hemianopic narrowing. All radii of the field are diminished, the most marked change being in the internal radius. The constriction coincides in time of appearance with the general premonitory symptoms of the fit. The greatest narrowing is observed immediately after the fit, and lasts for two or three days. Constriction in the field of color vision occurs in all cases, the greatest diminution being in the green field and the least in the blue field. In a majority of cases a perversion of color perception is also observed. The central vision grows more or less worse after the fit. Scotomata and synchysis scintillans often occur after the fit, as well as a rapid exhaustibility of the retina. In *hysteria* the fields of vision also undergo a concentric narrowing, and the color fields also undergo a similar change. Perversions of color perception are very frequent and varying. Paracentral scotomata not infrequently occur. In *neurasthenia* the visual and color fields are invariably narrowed in a concentric manner. Perversions of color perception are extremely varying and irregular. In *chronic alcoholism* a stable concentric diminution of the visual fields is met with almost invariably. Perversions of color perception may be met with in fifty per cent. of chronic cases. In *women* during the menstrual period there takes place a concentric narrowing of the field of

vision. The phenomenon makes its appearance one, two, or three days before the beginning of the menstrual flow, reaches its greatest intensity on the third or fourth day of menstruation, and gradually disappears about the seventh or eighth day of the period. The narrowing of the field varies in individual cases. The color fields undergo a corresponding limitation. Perversion of color perception is rarely observed except for green. Central vision becomes slightly impaired and rapidly returns to the normal standard after the catamenia.

Hereditary Atrophy of the Optic Nerve.—Habershon (*ibid.*) concludes that the hereditary nature of the affection depends on the transmission of a neurotic diathesis which leaves the patients specially prone to any exciting influence liable to affect the optic nerve. The liability to nervous disorders at the two periods of life represented by the disease must be regarded as extremely significant. These influences are more potent in young men than in women. Still, Habershon has not been able to find any case in which a disorder of vision could be attributed to sexual influences alone, because in most of the cases other common exciting causes are present—such as tobacco or alcohol. He considers that all the evidence points to some peculiar inherited predisposition to pathological disturbances of the nervous system, the precise part of the nervous system being determined by the kind of exciting influence.

Brain Disease with Hemianopsia.—Sharkey (*ibid.*) reports a case of cortical and subcortical disease of the occipito-angular region, producing hemianopsia. The patient was a man, aged twenty-nine, who had suffered for twenty years from ordinary epilepsy, and afterward from epileptic insanity. In October, 1886, he was struck on the vertex, and the wound left a scar. Since then he had not been able to use the right hand; the right leg was weak. On December 17th he had a fit, and was brought to the hospital. The pupils were dilated, the right being the larger; there were clonic spasms of the facial muscles and rigidity of the right arm and leg. There was hemianæsthesia of the right side, including the special senses, and optic neuritis. Right lateral hemianopsia developed, and, after some days of headache, insomnia, and coma, he died on February 1, 1887. On the day of his death his temperature rose to 107.4° F. At the autopsy a tumor was found in the left cerebral hemisphere, beneath the cortex, occupying the occipital lobe and part of the parietal lobe. The convolutions of the anterior half of the occipital lobe, superior parietal lobule, and upper extremity of the angular gyrus were thinned. The growth had involved part of the leg-centers in the superior parietal lobule. The optic neuritis was ascribed to the chronic thickening of the meninges at the base of the brain. The homonymous hemianopsia was ascribed to the destruction to the cortical and subcortical region of the occipito-angular region. The concentric contraction of the visual fields was probably due to the optic neuritis. The hemianæsthesia was due to the damage to the fibers which go to make up the sensory crossway, or to damage to the sensory radiations into the temporo-sphenoidal and callosal regions, and the optic radiations of the occipito-angular region.

Quiet Iritis.—Hutchinson, Jr. (*ibid.*), reports several cases of iritis in which the attack, sometimes leading to extensive adhesions and involving much deterioration of sight, was from the first unaccompanied by the typical features of inflammation. Iritis in certain cases does not reveal its presence by the characteristic frontal pain, and is practically unattended by congestion or photophobia. Sympathetic inflammation, congenital syphilis, and inherited arthritic tendency are probably the most frequent causes of quiet iritis. This form is very rare in the iritis of acquired syphilis, that of the ordinary rheumatic type, and in traumatic or herpetic iritis. Sex and age have little or no influence in modifying the severity of the symptoms accompanying iritis. A constitutional tendency can not always be invoked as the reason for iritis taking on an insidious form, as shown by the occasional occurrence of two attacks in the same patient, one being accompanied by violent inflammatory symptoms, the other being perfectly quiet throughout. The absence of the ordinary symptoms of iritis by no means always implies a mild course of the disease.

Experimental Researches on Antisepsis and Asepsis in Ophthalmic Practice.—Gayet ("Arch. d'ophthal.," Sept.-Oct., 1887) draws the following conclusions from his observations and experiments: 1. Most eyes

have concealed beneath their lids the germs of microbes. 2. The employment of antiseptic or aseptic methods exerts but a very slight influence on the presence of germs in the conjunctival *culs-de-sac*, and we can never be certain that the region for operation is free from them. 3. These germs are of several different kinds—cocci, staphylococcus aureus, staphylococcus albus, citreus, bacilli, and bacteria. 4. These germs are not all pathogenetic. 5. The cocci seem to be the dangerous species, as they have always been found in eyes which have undergone phlegmonous inflammation; still they must not be regarded as necessarily dangerous.

The Nutrition of the Vitreous Humor.—Leplat ("Ann. d'oc.," Sept.-Oct., 1887) concludes from his own observations and experiments that, assuming that it can be and has been demonstrated that the ciliary body furnishes the fluid portion of the vitreous, we still do not positively know where and by what channel this fluid passes out of the eye, though it is probable that the elimination occurs through the papilla. He forms the following idea of the intra-ocular lymphatic circulation: The ciliary body secretes a fluid which passes over by two channels. The first forms the aqueous humor, passes between the lens and the iris, and is excreted through Fontana's spaces. The second passes through the hyaloid membrane, makes a channel for itself between the elements of the vitreous humor, enters the central canal, and passes out of the eye by means of the optic nerve. Glaucoma may therefore result from some obstruction in the course of either circulation.

Myxosarcoma of the Upper Lid.—Van Duyse and Cruyl (*ibid.*) report a case of this nature occurring in a young girl aged seven. Nine weeks previously she received a contusion of the left upper lid from a rope. The contusion was followed eight days later by a small tumor at the middle of the lid, resembling a chalazion. This nodule increased in size very rapidly, was at first painless, and the skin overlying it was not discolored. Finally it became enormous, and larger than the child's fist. Its surface was hemispherical, and the skin over it became thinned and of a reddish-purple color. It was soft, elastic, irreducible, and non-pulsating, and was tender to the touch. The conjunctiva was thickened, everted, and secreted considerable pus. The growth was carefully removed, leaving the eye uninjured, and weighed eighty grammes. The neoplasm originated in the loose cellular tissue between the tarsus and orbicular muscle, and had grown forward, pushing the muscle and skin in front of it, and was separated from the eye and orbit by the tarso-orbital fascia. There was no trace of glandular or epithelial structure, and no pigmentation of the elements of the growth, which proved to be a sarcoma, poor in cells. Most of the cells were of the fusiform variety, and there were numerous embryonic elements among the cells and around the blood-vessels. The myxomatous elements were, however, but accessory.

The Operation for Strabismus.—Landolt ("Arch. d'ophthal.," Sept.-Oct., 1887) gives the following directions for the steps of the operation: After having determined whether the squint is paralytic or concomitant, he measures its degree and the field of fixation in the plane of deviation. He considers the age of the patient, the duration of the defect, the amplitude of convergence and accommodation, the refraction, and the visual acuity. He then determines the degree of loss of the binocular vision, and the possibility of producing diplopia by means of a prism or the stereoscope. If the individual is young, he first tries all methods of diminishing the strabismus before proceeding to an operation. If the squint is convergent, all work is stopped, atropine is used in both eyes, and convex glasses which correct the total hypermetropia are prescribed. If the squint is divergent, he advises a tonic treatment and orthoptic exercises, such as the use of the stereoscope. If the squint is by these means somewhat diminished, then the kind and extent of the subsequent operation are based upon the degree of deviation which persists. It should not be forgotten that in young persons convergent squint is often connected with excessive contraction of the ciliary muscle and often disappears spontaneously with advancing years. If a child has a convergent strabismus of 30°, and an operation is done to correct the entire deviation, without any other procedure, there is almost sure to be a divergence sooner or later, which will be much more difficult of correction than was the original convergence. Hence the child should first be submitted to the treatment previously indicated

until no further diminution of the strabismus is demonstrable, before any operative treatment is undertaken. When it becomes necessary to operate on both eyes, by double tenotomy of homonymous muscles, it is better not to operate simultaneously, but to base the second operation upon the final result of the first. If we can not obtain by the operation the precise correction of the deviation, we still have recourse to orthoptic methods to complete the result. A deviation of 20° will not yield to a simple tenotomy, and we must choose between a tenotomy of both internal recti and a combination of tenotomy of the internus with advancement of the externus of the same eye. If the strabismus is alternating, the first operation is to be done, but if it is unilateral, the second one must be chosen. The instillation of atropine must be continued and both eyes must be closed by an antiseptic bandage. Immediately after the operation there will be a certain amount of over-correction, an estimate of which will be had either by the aid of crossed diplopia, or by means of the perimeter. This surplus must be gradually diminished to the desired degree, even if it should become necessary to advance the internal rectus which has been already divided. If the divergence is very marked, the atropine is at once discontinued. If the divergence persists on the third day, the sutures in the advanced muscle are removed, but the binocular bandage is continued. If it still persists, the unoperated eye is uncovered. On the fourth or fifth day gymnastic exercises in convergence are to be instituted by causing the patient to fix his own finger, which must be gradually brought nearer the eye, and the operated eye follows it even under the bandage. As soon as the desired correction is obtained, we must endeavor to re-establish the amplitude of convergence—that is, the power to converge and diverge; and for the satisfactory re-establishment of this condition the patient must maintain single vision in spite of an abducting prism of 4°. The faculty of positive convergence must also be exercised by recourse to a black spot on white paper, or, if the sight of one eye is very weak, to the luminous line of the dynamometer. These objects are gradually brought near the patient in the median line, and he endeavors to maintain binocular single vision. This exercise of the accommodation aids in causing a disappearance of the divergence. If, in spite of all this, the divergence persists, then recourse must be had to advancement of the muscle previously divided, which is easily accomplished even a week after the first operation. Utilizing the old conjunctival wound, a strabismus-hook is passed beneath the muscle and a suture is passed through the latter. A slight pulling on the hook will detach the muscle from the eyeball, and it is then pulled forward and attached nearer the corneal margin. In choosing the method of operating for squint, it by no means suffices to recognize the degree of deviation, but it is also necessary to thoroughly appreciate the functional power of adductors and abductors. The examination of the visual field will very often show a perceptible limitation on the nasal side of both eyes. It is only when the divergence is very weak and when the field of fixation of each eye amounts to at least 47° inward that a tenotomy suffices to correct the astigmatism. If the visual acuity of the two eyes is about equal, and if the muscular conditions of each are good, a second tenotomy on the other eye will easily correct what the first tenotomy failed to correct. If, on the contrary, the divergence is of long standing and high degree, if the eye is highly amblyopic and its internal rectus very weak, if this muscle is elongated and atrophied, then the union of a complete tenotomy with an equally complete advancement of the antagonist is urgently demanded. It is even sometimes necessary to perform on the other eye either a tenotomy or an advancement, or a combination of the two, to obtain a perfect result. Before doing this, however, the atropine should be discontinued; only the operated eye is bandaged after a tenotomy; or, if an advancement has been combined with a tenotomy, both eyes are bandaged for only two days. The operated eye should be bandaged until the muscles have become attached at their new lines of insertion. In those cases marked by insufficiency of convergence, surgical interference must be guided by great prudence. It will be found that an advancement is generally more effective than a tenotomy, and an advancement combined with tenotomy on one eye is preferable to a tenotomy done on both eyes.

The Relation of Ophthalmic Disease to Certain Normal and Pathological Conditions of the Sexual Organs.—Power ("Ophth. Rev.," Dec., 1887) considers that the effects of onanism upon the visual or-

gans have been exaggerated, and that the eye symptoms are usually of a functional character, such as amblyopia, muscæ, and failure of accommodation. In some instances serious affection of the optic nerves ensues. In women, when the institution of the menstrual flow is interfered with, the eyes, in common with other organs, are the subject of symptoms attributable to the uterine disorder. In such cases choroidal hæmorrhage not infrequently occurs, which enters the vitreous, and vision is seriously impaired. Various forms of keratitis are seen in women suffering from amenorrhœa and dysmenorrhœa. Serous iritis as a concomitant of amenorrhœa and dysmenorrhœa has frequently been observed. Retinal hæmorrhage consequent on sudden suppression of the menses has frequently been noted. Paresis of ocular muscles, both external and internal, has been observed in connection with catamenial irregularity. Power holds that menstrual disorders constitute a factor in the development of conical cornea. In pregnant women failure of accommodation is of frequent occurrence, and is usually met with in the later months of pregnancy. Retinal hæmorrhages sometimes result from the strain of the severe vomiting of pregnancy. Gravidic retinitis, a condition closely resembling albuminuric retinitis, is of not very infrequent occurrence. In the puerperal state we also meet with septic puerperal embolism and paralyzes of the ocular muscles. In the suckling woman failure of the ciliary muscle, keratitis, and hypopyon are frequently met with, and are indications of the general exhaustion resulting from prolonged lactation.

Ivory Exostosis of the Orbit removed by Drilling.—Grossmann (*ibid.*) reports an interesting case of this kind occurring in a young man aged twenty-four, who was first seen in October, 1884. Protruding below the inner half of the right eyebrow was a large, spheroidal tumor, very hard and immovable, completely filling the upper and inner half of the orbital margin. The right eye was pushed outward and downward to the zygoma, and its movements in all directions impaired. The conjunctiva was hyperæmic, the optic disc was of a reddish color, and the retinal veins were dilated $V = \frac{1}{2}$. The left eye was quite normal, but in the inner side of the left orbit was a small, hard prominence, as large as a cherry-stone. The growth had been coming on gradually for nearly ten years. In September, 1886, he was again seen. On the right side the tumor almost entirely filled the orbit, and the eye was destroyed. The cornea had sloughed and vision was nil. The small exostosis in the left orbit had grown, and the eye was pushed downward and outward. $V = \frac{1}{2}$. The right sloughing eyeball was removed at once. It was decided to drill long holes close together through the whole base of the tumor in the left orbit, and to sever the septa between them by drills which cut laterally. Special drills were made for the purpose, those for boring the holes being one tenth of an inch in diameter, and those for cutting laterally being one sixteenth of an inch in diameter, and they were long enough to drill holes more than an inch and a quarter deep. After forty minutes tedious work an intensely hard, flat exostosis was taken off. A second tumor was found behind the first, and was also removed. The whole operation lasted two hours and a half and was very fatiguing. The wound was closed in the usual way, a small drainage-tube being left in, and the patient left the hospital on the twelfth day. Six weeks later the eye had resumed its normal position and vision was re-established. One year after the operation there was no change, and the tumor seemed to have stopped growing. When an exostosis is flat and extremely hard, Grossmann prefers drilling to chiseling. The drill can be used as lightly as a pencil, and the treadle is more reliable than electricity or any other mechanical means.

Congenital and Hereditary Defects of Ocular Movements.—Lawford (*ibid.*) reports four interesting cases, those of a father and three of his seven children, the remaining four being unaffected. The three affected children were Nos. 2, 4, and 7. In all four patients there were almost complete bilateral ptosis, loss of upward and downward movements of the eyes, and very defective lateral movements. Visual acuteness and accommodation were good, and there were no ophthalmoscopic changes. No other congenital defect was present in any of the cases. Lawford draws attention to the fact that the ocular muscles, and not their nerves, were the structures at fault. In similar cases previously published, in which autopsies had been made, these muscles were in some instances found absent; in others they were ill-

developed and shorter than the average measurement, while in almost every case their insertions into the sclerotic were displaced more or less backward.

Bichloride of Mercury in the Treatment of External Diseases of the Eye.—Alt ("Amer. Jour. of Ophth.," Nov., 1887) considers that sublimate solutions are very valuable aids in ophthalmic therapeutics. The strength in which he uses the drug varies from one part in 2,500 to one part in 5,000. The first solution sometimes causes severe pain, and must then be diluted. In all cases the solution is to be poured into the eyes while the patients are recumbent. In simple conjunctivitis with hardly any discharge, but with heat and dryness of the lids, instillations of sublimate solutions morning and evening act very well. In acute catarrhal conjunctivitis it is not so satisfactory, but in chronic catarrhal conjunctivitis it is very agreeable to the patients. In phlyctenular conjunctivitis it has a bad effect. In all forms of purulent conjunctivitis the frequent irrigation of the conjunctival sac with a solution of 1 to 2,500 is extremely efficacious, and Alt has obtained the same excellent result in diphtheria of the conjunctiva. In trachoma the remedy is of great help, as well as in blepharitis ciliaris. Ulcers of the cornea all do better when freely irrigated with the sublimate solutions.

Ocular Symptoms due to Nasal Disease.—Gradle ("Arch. of Ophth.," xvi, 4) presents his observations in the following order: 1. Lacrymation is not infrequently the result of nasal disease, without primary lesion of the tear-passage or of the eye. In some instances the persistent and annoying epiphora follows an acute attack of nasal catarrh. In other cases the lacrymation varies with the season, and is preceded by the signs of irritation of the front part of the nasal passages. It is probable that the flow of tears is increased in a reflex manner by the nasal irritation. 2. A marked type of ocular trouble of nasal origin is presented by a combination of a feeling of fullness of the lids and itching, with or without lacrymation, sometimes with more or less pain in the eyes. The ocular symptoms may be intermittent, remittent, or persisting for weeks or months. The diagnosis of nasal reflex is strengthened in such cases by the fact that the correction of any existing refractive anomaly is insufficient to remove the annoyance. Whenever in such instances the eye-strain is persisted in, there usually follows a congested condition of the conjunctiva. In all these cases the nasal disease consists of irritability of the blood-vessels in and beneath the mucous membrane on the anterior end of the inferior and middle turbinated bones, and in rare cases the upper and forward part of the septum. Distant reflexes, which sometimes involve the eyes, may arise from almost any part of a diseased nose or throat, but the great majority of nasal reflexes depend on the anomaly termed "irritable nose," with sudden engorgement of the nasal blood-vessels. In some instances the irritability of the nose depends upon the presence of some other lesion. Polypi may play this rôle of primary factor, but more often it is a catarrhal inflammation of the nares. In these instances a 4-per-cent. spray of nitrate of silver once a day, preceded by a spray of cocaine, gives relief to the patient. Where there is much discharge, it is better to remove it first by means of a douche of bicarbonate of sodium. Where no cause can be found for the nasal irritability, the only means of relief consists in the destruction of the cavernous tissue, and where the vascular tissue is not much hypertrophied this may be done by chromic acid. The galvanocautery is more thorough in its action, provided a strong current is employed. 3. Another type of ocular disturbances, also characterized by itching and discomfort in the lids, is peculiar in the periodicity of the attack. The trouble begins between May and July every year, and terminates promptly with the first cold days of autumn. A peculiar conjunctival lesion forms during the course of this affection, appearing first as a slight follicular enlargement, and ending in the formation of large, flat, yellowish follicular granules. 4. A somewhat different type of symptoms results in those instances in which there is less itching of the lids, while photophobia, with or without pain, is more prominent. Such eyes are often bloodshot. There may be more or less asthenopia and lacrymation. 5. In other cases there may be a more or less marked injection of the circumcorneal vessels. 6. Sudden congestion of the lids, varying from an erysipelatoid condition to a mere superficial erythema, is not very uncommon in patients with irritable noses. The attack resembles genuine erysipelas, but it does not spread, and, as a rule,

is not accompanied by much rise in temperature. It may last from two to six days, and is followed by more or less desquamation. After its first occurrence it is apt to return at intervals of months or years. 7. In other instances vaso-motor reflexes occur in the form of sudden oedema of the lids. The attack lasts only a few hours, or, at the most, a day.

The Connection between Diseases of the Eye and Diseases of the Nose.—Nieden (*ibid.*) considers that one of the chief causes of anisometropia lies in the general asymmetry of the orbital and nasal region and cavities which is so often found to exist. He also recognizes the fact that various affections of the eye are due to a previously diseased condition of the nasal mucous membrane. Some of these processes are propagated by direct intermediation of the nasal portion of the lacrymal canal, and so introduce infectious inflammation of the neighboring lining membranes that are similarly constructed. Reflex processes, excited by the nerves of the nasal mucous membrane, also give rise to reflex sympathetic affections in the eye and its neighborhood. These reflex processes depend upon the anatomical fact that both cavities are supplied by twigs of the first and second trigeminal branches of the naso-ciliary and sphenopalatine nerves. They can also be explained by the associated action of the ciliary and rhinic ganglia. Nieden thinks that chronic inflammation of the nasal mucous membrane, in which a thin secretion desiccates upon the surface in the shape of brown or greenish crusts of dried mucus, which readily decompose and give rise to the repulsive characteristic odor, together with the atrophy of the turbinated bones, are considerably influenced by the absence of the constant though slight moistening of the nasal passages normally excited by every motion of the eyelids. The development of chronic rhinitis into ozæna is largely due to the absence of this regular lacrymal secretion. He considers that phlyctenular keratitis almost invariably has its origin in a disease of the nose, and that the trouble can only be permanently and certainly relieved when simultaneously the pathological condition of the diseased mucous membrane of the nose has been treated and restored to its normal state. Nieden concludes his paper by reporting in detail four very interesting cases: The *first* was a case of polypus, starting from the upper portion of the nostrils, first perforating the median left and then the right orbital wall, and causing bilateral exophthalmus, and finally death, with cerebral symptoms. The *second* case was one of myxosarcoma of the mucosa of the superior nasal sinus, rupture of the ethmoid plate, extension into the cranial cavity, and thence to the base of the brain and into both orbits, with neuro-retinitis, bilateral exophthalmus, amaurosis, and death in coma. The *third* was a case of chronic empyema of the right frontal sinus and ethmoid labyrinth, with rupture into the right orbit, dislocation of the eyeball outward, and direct communication of the abscess with the nasal antrum. The *fourth* was a case of diffuse hypertrophy of the nasal mucous membrane, empyema of the maxillary sinus, infra-orbital neuralgia, right blepharospasm, with a cure following evacuation of the abscess and cleansing of the nasal and maxillary cavities.

A New Instrument for testing Insufficiencies of the Recti Muscles.—Holden (*ibid.*) proposes to test these insufficiencies by measuring the horizontal distance between the images. He describes an instrument which has a strong vertical prism for producing displacement of the image, and a rotating prism which serves the purpose of a series of horizontal prisms, and brings the displaced image to the vertical line. The vertical displacement and the lateral correction may, however, be made by a single glass. If a mirror is held horizontally a little above one eye, a reflection of a distant light may be seen in the mirror, while a screen below cuts off the view of the object itself. The other eye will see the light, and with the two eyes will be seen two images, one above the other. The mirror has the same effect as the vertical prism, and if there is an insufficiency of either the internal or external recti, the images appear obliquely, and the rotation of the mirror will bring them into a vertical line. When the mirror is tilted from side to side, the displaced image describes a curve. If it is rotated from a vertical position 180° to another vertical, the image describes a circle, passing through the true position of the image. When the axis of rotation is tilted up from the horizontal, the image is displaced farther upward, and the circle described by the image during the

rotation of the mirror is larger. The axis of the mirror should be elevated until the image is displaced as much as a 14° prism would displace it, and then, when the axis is directed exactly toward the light and the mirror rotated, the image will extend laterally an equal distance to each side of the true position of the light. A scale may then be made on the stand of the instrument, and, in a case of insufficiency when the two images are brought to a vertical line by the rotation of the mirror, the degree of prism necessary to correct the insufficiency may be read off the scale. When the mirror does not rotate on a fixed axis, but one end of the axis describes a curve of a variable radius corresponding to the width and elevation of the mirror, the image, instead of moving in a curve, moves in a horizontal line. This double motion is easily secured by extending from one pole of the mirror two wires which slide in a curved slit. By having a hinge in the stand which can be turned 90° , insufficiencies of the superior and inferior recti muscles can also be tested.

Tuberculosis of the Eye.—Neese (*ibid.*) reports a very interesting case occurring in a man, aged thirty-three, who on July 21, 1882, came for advice for pain in one eye. The media were slightly cloudy, the papilla was indistinct, and the vessels were engorged. On dilating the pupil, vitreous opacities were seen. Syphilis was acknowledged. Under antisyphilitic treatment the eye became steadily worse. On October 4th an iridectomy upward was made. By October 31st the eye was totally blind, and on November 4th was enucleated. The eyeball lay in Müller's fluid for two years, and, on being opened, a tumor of the ciliary body was discovered which was supposed to be a gumma. In the medial portion of the ciliary region, with its medium transverse diameter near the boundary between the chorioid and the ciliary body, was an oval tumor 8 mm. long and 4 mm. wide, well defined from the sclera by the thickened uvea. The retina was totally detached and the chorioid was thickened in spots. The tumor had a peripheral zone and a central portion. In the upper portion of the former could be seen the margin of the normal uvea, with the posterior part of the ciliary body swollen into a spindle shape, and the chorioid thickened. Below was the tumor, partly bounded by the fluid which had coagulated behind the detached retina, and partly by the innermost layer of the detached and folded retina, and partly by a fibrous structure which filled the entire zonular region as far as the capsule of the lens. There were a large number of giant cells appearing in spherical clumps or as disc-like, elongated, or stellate structures. The central portion of the tumor consisted of amorphous granules and dense masses of cell detritus, and a few giant cells. The ciliary body consisted of a thick fibrous tissue interspersed with round cells and nuclei, and in part of a looser mesh-work containing several round nodules like those already described. In the thickened granular layer of the retina were two similar nodules with central flat giant cells. The retina in the posterior temporal section terminated in a second circumscribed focus, inclosed between itself and the chorioid, and consisting of cheesy nodules and giant cells, round and granulation cells. The chorioid was thickened, interspersed with round cells, nodules, and giant cells. The microscopic investigation seemed to favor the view of a circumscribed tubercle of the chorioid with disseminated transmission into the chorioid and retina. Haab's method for determining the presence of tubercle bacilli was employed and sections were left for three or four days in a freshly prepared fuchsine solution, bleached in alcoholic nitric acid, and again colored in methylene blue. Long search among many sections at last revealed a few genuine bacilli in the giant cells as well as in the reticulated tissue.

Miscellany.

The late Dr. Cornelius B. Agnew.—At a meeting of the Medical Board of the New York Foundling Asylum, held on June 1, 1888, the following resolutions were unanimously adopted:

In the vicissitudes and uncertainties of life, death comes to call those whose lives are sometimes of the most value, because most useful to their fellow-men.

Such was the case in the person of a member of the consulting staff of this asylum, Dr. C. R. Agnew.

Dr. Agnew was a man of uncommon ability and of urbane and accomplished manner, and his life was largely devoted to the performance of good works. He was identified with many of our public charities, either on the consulting staff or as one of the board of directors or governors. He was large-minded and of a varied and rare executive ability, which he exercised freely on all occasions for the public weal.

His colleagues deplore his untimely death when his mind was brightest and his life most active, useful, and fruitful for good. Be it therefore

Resolved, That for the sorrow which has befallen his family we offer our respectful condolence and sympathy. As a further token of our esteem and respect, the secretary is requested to enter as a minute in the records of this board this preamble and resolutions.

Resolved, That a copy of these resolutions be sent to his family, and published in the "New York Medical Journal" and "Medical Record."

CHARLES CARROLL LEE, M. D., } *Committee.*
GEORGE F. CAREY, M. D., }

The Healing Properties of a Brass Mule.—The "China Medical Missionary Journal" says:

"A friend, recently returned from Peking, tells us that he saw a method of cure which may be new to some of our readers. In a temple outside one of the city gates is to be found a brass mule of life size supposed to have wonderful healing properties. Patients suffering from every imaginable disease seek this temple to obtain a cure. The method pursued is as follows: Supposing you suffer from sciatica, you go with all speed to this famous temple, and having discovered the particular part of the brass mule corresponding to the painful region of your own body, you first rub the animal a certain number of times and then with the same hand shampoo your own disabled member, and then—well, then the pain goes. The special feature of this method of cure is its delightful simplicity. Is your tooth aching? Just scrub the mule's teeth and afterward your own, and, *voilà!* the cure is complete. Have you an ulcer of the cornea? Pass the tips of your fingers to and fro over the particular eyeball of the mule, and then with well-regulated pressure rub repeatedly the afflicted eye. The mule has unhappily lost his sight during the many years he has been engaged in his benevolent work, the eyeballs, we are told, having been gradually worn away as the result of constant friction, until now you have only the empty orbits to operate upon. The animal is patched in all directions with fresh pieces of brass, put on to cover holes produced by the constant friction of eager patients, and a new, perfectly whole mule stands ready at hand, awaiting the day when his old colleague, having fallen to pieces, shall give him an opportunity of likewise benefiting posterity."

Succus Alterans.—Dr. George Howe, of New Orleans ("Atlanta Medical and Surgical Journal"), publishes notes of a number of cases in which he has continued to observe good results from the use of this preparation in various stages of syphilis.

Mental Affections and Aural Disease.—The "Lancet" says that "sufferers from noises in the ears are sometimes greatly distressed by the tinnitus, and cases of suicide have been ascribed to sheer desperation resulting from an inability to get relief from the everlasting noise. Ménière's disease and some cases of epilepsy are attributed to disease in the ear setting up changes in the central nervous system. The question is still unanswered whether actual mental disease, mania or melancholy, may not be produced by aural disease, apart from any annoyance due to tinnitus or deafness. Coarse diseases, such as otorrhœa, suppuration in the mastoid cells, perforations of the drum, polypi, waxy concretions, and foreign bodies, are easy of recognition, and can be appropriately treated generally by simple surgical methods. But nervous affections due to irradiation from the obscure aural mischief are not always so open to treatment, because the changes in the ear are more subtle, but none the less real. Sometimes an obstruction of the Eustachian tube may be the chief cause of tinnitus, owing to unpoised atmospheric pressure leading to excitation of the labyrinth and acoustic nerve by actual compression. M. Boucheron believes that, besides vertigo, epilepsy, and other nerve troubles, mental disease may be origi-

nated, and simple inflation of the middle ear has been followed by a cure."

The Health of Michigan.—According to the State Board of Health's summary for the four weeks ending June 30th, during that period diphtheria was reported from nineteen places, scarlet fever from thirty, typhoid fever from ten, measles from forty, and small-pox from one place.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 6th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 16th corresponded to an annual rate of 16.2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 9.9, and the highest in Manchester, viz., 27.9 in a thousand. Small-pox caused 2 deaths in Sheffield, 1 in Bristol, 6 in Preston, 1 in Manchester, 2 in Hull, and 1 in Leeds.

London.—One thousand one hundred and sixty-seven deaths were registered during the week, including measles, 21; scarlet fever, 19; diphtheria, 18; whooping-cough, 34; enteric fever, 8; diarrhœa and dysentery, 16. The deaths from all causes corresponded to an annual rate of 14.2 in a thousand. Diseases of the respiratory organs caused 213 deaths; different forms of violence, 71, and 14 suicides were registered. In greater London 1,438 deaths were registered, corresponding to an annual rate of 13.6 in a thousand of the population. In the "outer ring" 8 deaths from whooping-cough, 6 from scarlet fever, and 6 from diphtheria were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending June 16th in the sixteen principal town districts of Ireland was 22.5 in a thousand of the population. The lowest rate was recorded in Dundalk, viz., 4.4, and the highest in Kilkenny, viz., 33.8 in a thousand. In Dublin 167 deaths were registered, including whooping-cough, 5; enteric fever, 2; scarlet fever, 4; and diarrhœa, 3.

Scotland.—The deaths registered in eight principal towns during the week ending June 16th corresponded to an annual rate of 20 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Dundee, viz., 15.2, and the highest in Glasgow, viz., 23.9 in a thousand. The aggregate number of deaths registered from all causes was 505, including measles, 13; scarlet fever, 5; diphtheria, 1; whooping-cough, 5; fever, 3; and diarrhœa, 9.

The death-rate during the preceding week corresponded to an annual rate of 18.5 in a thousand.

Netherlands.—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,129,676, during the month of April, corresponded to an annual rate of 24.1. The lowest rate was recorded in Haarlem, viz., 19.7, and the highest in Arnhem, viz., 36.1.

Bordeaux.—Four hundred and seventy-three deaths were registered during the month of May, 1888, including enteric fever, 4; scarlet fever, 1; diphtheria, 14.

Fayal, Azores.—The United States consul, in his dispatch dated May 29, 1888, relative to small-pox in the island of Terceira, states that "it continues there, and passengers thence were quarantined at the other islands until now, when an order from the home government has forbidden the mail-packets to receive at that island either cargo or passengers. At the island of St. Michaels the disease manifested itself in two of its most distant villages from the town, but has been prevented from spreading thus far."

Preston, England.—The United States consul at Liverpool, in his dispatch dated June 11, 1888, states that "small-pox is now raging in an epidemic form at Preston, a sea-port of 103,234 inhabitants, distant about thirty-five miles north of this city, at the head of the River Ribble. The disease assumed an epidemic form about the 4th instant, since which time the total number of registered cases is 183, of which 7 were fatal. During the last few days the number of cases reported has decreased, but some of them were of a more virulent type than

those previously registered. The medical offices of health have recommended the abandonment of all public assemblies for the present, and every precaution is being taken to arrest the spread of the disease."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Eutene fever.	Scarlet fever.	Diphtheria.
Paris	June 16.	2,260,945	890			8		6	6	32
Glasgow	June 16.	545,678	242					5	2	1
Warsaw	June 2.	444,814	198			5		2		3
Calcutta	May 12.	433,219	236	53				3		3
Rome	April 28.	388,300	172					1	5	1
Palermo	June 9.	250,000	81							1
Genoa	June 16.	179,416	73			2	3			1
Trieste	June 9.	154,500	90			5				6
Toronto	June 23.	130,000	35						1	
Stuttgart	June 16.	125,510	42							1
Bremen	June 9.	122,000	58							1
Havre	June 9.	112,074	71			4		5	2	
Pernambuco	May 29.	110,000	98		1			4		
Barmen	June 9.	109,000	51							2
Leghorn	June 17.	101,718	35						2	
Reims	June 2.	97,903	59			1		2		1
Cadiz	June 16.	65,028	53							
Merida	June 18.	48,800	32					2		
Cienfuegos	June 18.	40,573	20			1				
Gibraltar	June 9.	23,631	5							
Cardenas	June 21.	22,000								
Sagua la Grande	June 16.	15,605	16			2				
Bermuda	June 27.	15,260								
Cartagena	June 2.	13,000	8							
Matamoros	June 16.	12,000	8							
Nassau, N. P.	June 23.	12,000								
Laguayra	June 16.	7,428	5							
Turk's Island	June 13.	5,000	3							
Livingston	June 16.	2,500	1							

UNITED STATES.

Florida.—Yellow Fever.—This Bureau is informed that about the middle of June yellow fever reappeared at Plant City, and there was one death therefrom, June 22d. Another case in the vicinity, four miles and a half from Plant City, died on the 26th. There have been several mild cases in the village, which contains less than 300 inhabitants, but for the present trains will not stop at Plant City, and it is understood that mails will be delivered at Cork post-office, five miles west of Plant City. In the mean time, by direction of the governor, the most active measures are being taken by the president of the county board of health, Dr. J. P. Wall. The board have promulgated the following regulation concerning the epidemic:

The Board of Health of Hillsborough County adopts and promulgates the following rules to prevent the spread of yellow fever at and from Plant City:

1. Railroads passing through or into Plant City are prohibited from carrying passengers and baggage to or from Plant City, or from delivering or taking on freight, or transferring freight from the cars of one road to cars of another road at or near Plant City, except the delivery of the necessary supplies for the people living in the place. Said railroad companies are also prohibited from delivering or taking on the United States mail at Plant City.

2. All employees of the railroads living at or near Plant City must be acclimated to yellow fever by a previous attack of the disease; and such employees should be enjoined to keep away from the sick, if any, and aloof from all places suspected of being infected with yellow-fever poison.

Rule 3. These rules are substituted for Rule 2 of the rules adopted and promulgated April 24, 1888.

The president of the county board of health states that—

In explanation of the foregoing stringent rules, it is necessary to say that the Board of Health of Hillsborough County believes Plant City to be infected with the poison or germs of yellow fever; and inasmuch as expensive efforts to disinfect the place and stamp out the disease have failed, it is due to the public safety and welfare of the State to isolate the place and have it shunned as an infected place until such time as the Board of Health may deem it safe for people to go there. It is deemed absolutely necessary to suspend all business and cut off all communication with Plant City to prevent the risk of a wide-spread epidemic of yellow fever this summer. It is true that there is

not much sickness there, and happily the large majority of the residents in the place are acclimated by a previous attack of the disease; but by visiting the place or commingling much with the people who still reside in Plant City there is unquestionably great risk of spreading the disease. The summer is here, and the time for temporizing measures has passed. It is probable that Plant City will remain infected for some time, if not for the whole season, and hence the necessity for these stringent measures. Everybody is especially cautioned from being deceived by assertions of the disease being anything else but what the Board of Health has honestly pronounced it—yellow fever.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Eutene fever.	Scarlet fever.	Diphtheria.
Philadelphia, Pa.	June 16.	1,016,758	353			3		14	4	4
Philadelphia, Pa.	June 30.	1,016,758	536			2		12	5	7
Baltimore, Md.	June 20.	431,879	248					4		1
New Orleans, La.	June 23.	216,090	120					1		4
Richmond, Va.	June 30.	63,600	61					1		
Charleston, S. C.	June 30.	60,145	34							

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

A CLINICAL LECTURE ON SYPHILITIC OTITIS.

Delivered at the New York Polyclinic, June 28, 1888.

By MATTHIAS L. FOSTER, M. D.,

INSTRUCTOR IN OTOTOLOGY AT THE NEW YORK POLYCLINIC; SURGEON TO THE
OUT-POOR DEPARTMENT OF BELLEVUE HOSPITAL; CLINICAL ASSISTANT
AT THE MANHATTAN EYE AND EAR HOSPITAL.

GENTLEMEN: At our last meeting I was requested by certain of your number to give you to-day a few points on syphilitic otitis. In response to this request I have prepared some notes on its pathology, symptomatology, and diagnosis. I lay no claim to originality in these remarks; they have been compiled from various works on diseases of the ear and on syphilis, and contain, I think, most of what is at present known on this subject. Our knowledge regarding it is of quite recent date and is, as yet, by no means complete. Some of the lesions presented by this disease are readily recognized, while many are not. Those which are easily recognized are situated in the external portion; those affecting the internal ear are largely known only by inference from the symptoms and analogous lesions elsewhere.

Syphilis may attack any portion of the auditory apparatus, from the auricle to the origin of the auditory nerve in the brain. Beginning with the auricle, we find the cutaneous surface or the cartilage destroyed by ulcers and gummata which present the characteristics familiar to you, the same as those presented by similar syphilitic lesions elsewhere in the body.

In the external auditory meatus one may find mucous patches, with spongy granulations, erythema, or pustules. Mucous patches, or condylomata, in the external portion of the meatus are usually isolated, but more internally they may be multiple. Sometimes the granulations fill the canal so as to hide the membrana tympani. It is very difficult to decide in a given case whether these growths are or are not of a specific nature, as they are frequently observed in cases where there is no reason to suspect syphilis. These are usually painless, but a lesion is described which appears at first as an ill-defined swelling, with redness and pain, followed by a discharge of purulent matter. In its early stage it is readily mistaken for an ordinary furuncle, but the diagnosis may be established by its course after incision and evacuation of its contents. A simple furuncle goes on rapidly to repair; one with a syphilitic taint does not disappear, but an ulcerative process supervenes, which may continue indefinitely. Sometimes there is a considerable exfoliation of epithelium in the meatus which accumulates in the form of scabs upon the membrana tympani and may interfere with the hearing. Its action on the ceruminous glands is uncertain; in some cases the meatus presents a dry appearance on account of the absence of the normal amount of secretion, in others supersecretion by the glands seems to result in impaction of cerumen. I do not know of any means by which to determine that the cause is syphilis, in any given case of impacted cerumen. If this could be determined, a certain number of cases might possibly be cured of their tendency to rapid reaccumulation of the se-

cretion. Gruber maintains that exostosis and hyperostosis of the external auditory meatus may result from syphilis, but other writers express a good deal of doubt regarding this. All these forms of otitis syphilitica externa are rare.

When we come to the middle ear we find the pathology in the main similar to that of syphilitic lesions of other mucous membranes, as of the throat and nose. A specific inflammation in the fauces may travel up the Eustachian tube, or isolated lesions may occur in the tube in connection with or independently of the tympanum itself. Such an inflammation, causing ulceration, adhesion, and stricture of the tube, produces disastrous effects upon the hearing, as you may readily understand. I should mention in this connection that another cause which produces the same effect is sometimes met with in cases of gummata of the soft palate, in which the remains of the soft palate become adherent to the walls of the pharynx and mechanically obstruct the Eustachian tube; for, this condition once formed, if even a very small portion of the tube itself is involved, there is no remedy, but in a certain number of cases the adhesions surround without involving the tube, and the obstruction can be successfully removed. The mastoid cells may be involved by extension from the tympanum with or without perforation of the membrana.

Gruber describes a hyperplasia of the bony tissues of the tympanum, sometimes affecting the ossicles either wholly or partially. Periostitis seems to be the basis of these cases. According to Sexton, there may occur a disarrangement of the integrity of the chain of ossicles, most commonly at the malleo-incudal joint, probably sometimes at the incudo-stapedial joint, or at both. The movements of the stapes in the oval window may also be interfered with. The first-mentioned condition may serve to explain the tinnitus and autophony; the last increases the anomalies of hearing.

In the internal ear there is good reason to believe that there may be hyperæmia and periostitis as well as gummata, but I am unable to speak definitely concerning this. Most observers are agreed that the labyrinth is usually the seat of the syphilitic lesion. It is a peculiarity of syphilis that it may produce its well-marked textural changes in almost any spot in the body, while the neighboring parts may exhibit no evidence of being involved or affected by the process. Thus the membranes of the round and oval windows may be much swollen without involving any of the remainder of the mucous membrane of the tympanum, or being associated with an exudation into it; hence without any evidence of middle-ear disease. But this swelling must press on the fluid of the labyrinth, and therefore may produce the symptoms referable to such pressure, such as deafness, staggering, and dizziness, and may work irremediable changes in the delicate structures of the internal ear. When this occurs in acquired syphilis it is usually in the secondary stage.

The lesions in the acoustic nerve which are due to syphilis do not differ from similar lesions in the other cranial nerves, regarding which you have been taught in the department of neurology.

From this brief review of the pathology of syphilitic otitis you will readily and correctly infer that the symptoms presented will in many cases differ little, if at all, from those seen in non-specific cases. Passing over, with what I have already said, the diseases of the external ear, we will consider first the symptoms presented by disease of the middle ear.

As long as the lesion is confined to the Eustachian tube the symptoms and physical signs on the membrana tympani are those of chronic catarrhal otitis media with stenosis of the Eustachian tube, and can be diagnosticated only by the appearance of specific lesions in the fauces. When the mucous membrane of the tympanum is involved, certain changes may at times be noted in the membrana. Usually it looks dry, its brilliancy is more or less lost, and it is reddened moderately or not at all, with perhaps redness at the inner end of the meatus. Its surface may become uneven and the membrana itself infiltrated. This infiltration in some cases becomes so great that the position of the malleus-handle can be recognized only by the injected vessels which run along it. Very rarely it becomes perforated. The attack of deafness is usually painless, is sudden, and may yield as suddenly to energetic antisymphilitic treatment. In these cases the deafness is evidently due to interference with the apparatus in the middle ear, because the patient can hear his own voice (autophony), and the tuning-fork can be distinctly heard when placed on the head.

When the internal ear is affected the onset is sudden; both ears are usually involved, but not of necessity simultaneously or to the same extent. There is loss of hearing by both aerial and bone-conduction in the same ratio, accompanied perhaps by neuralgic pains in the temporal and frontal bones, but seldom by any external evidence of inflammation. Tinnitus is usually present and very distressing, frequently associated with giddiness. The progress is rapid and, unless treatment is very prompt and unusually successful, absolute deafness may result.

When a patient comes to you with a history of sudden painless deafness, with tinnitus, dizziness, and nausea, especially if a syphilitic history can be elicited and no other cause can be ascertained, push antisymphilitic treatment as hard as possible. Put the patient in bed and use mercury so as to touch the gums within a week. It is possible that no improvement will be obtained until the system is thoroughly under the influence of the drug, and that then the deafness may disappear as suddenly as it came. In acquired syphilis this severe form is, happily, not common. The inherited disease is, on the contrary, a rather common cause, but is much less amenable to treatment than the acquired. It is one of the most frequent causes of non-congenital deaf-mutism, and is more often met with in females than in males. We do not know in these cases whether the disease is located in the labyrinth or in the nerve itself.

As I have said, the diagnosis of syphilitic otitis is frequently very difficult. Often there are absolutely no diagnostic signs which may enable us to determine whether the affection of the ear is due to syphilis or not. The presence or absence of other lesions syphilitic in their nature should be determined by careful physical examination of the pa-

tient, for direct questioning often fails to obtain aught but an indignant denial. When there is simply catarrh of the middle ear without the characteristic signs I have mentioned, when no easily recognized specific lesions can be found elsewhere and no history can be elicited, the actual trouble may sometimes be suspected from the obstinacy of the affection under ordinary treatment, or the more rapid and complete loss of hearing than in non-specific catarrh, and may be determined in a few cases with a fair degree of certainty by the wonderful effect produced by constitutional treatment. But it must be borne in mind that non-specific exudations may be removed by the same means. The best diagnostic sign is the rapid or sudden loss of hearing without apparently sufficient local cause. Sudden facial paralysis and deafness are diagnostic of disease of the internal ear, or of the auditory nerve involving the facial.

A pervious Eustachian tube with no sign of disease on the membrana does not of necessity exclude middle-ear complication, for the lesion may involve the ossicles or the inner wall of the tympanum to such an extent as to seriously interfere with the hearing without affecting the Eustachian tube or the membrana. The greatest difficulty in diagnosis is experienced in those cases in which the middle ear is known to be diseased and it is desired to learn to what extent the labyrinth or nerve is involved. This is to be determined in the usual manner by means of the tuning-fork.

The prognosis must be considered bad as regards the hearing, although quite a number of brilliantly successful cases are on record. When the true condition is recognized in an early stage, as it probably will be with increasing frequency in the future, the prognosis is very much better.

In treatment we rely on mercury and iodide of potassium, either separately or in combination. Little or no reliance can be placed on local measures. Follow the same course of treatment that you would in specific lesions elsewhere, but push it energetically, remembering that time is invaluable to save the delicate mechanism of the ear from injury which can never be repaired.

101 WEST SEVENTIETH STREET.

Original Communications.

INTRAPELVIC KIDNEY MISTAKEN FOR DISEASED UTERINE APPENDAGES. ABDOMINAL NEPHRECTOMY; RECOVERY.

By PAUL F. MUNDÉ, M.D.,
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MOVABLE or floating kidneys are so frequently met with nowadays and so easily recognized, as a rule, that no one thinks of recording isolated cases. Landau, in his monograph on "Die Wanderniere bei Frauen" (Berlin, 1881), gives a list of forty-five cases seen by himself; Lindner ("Frauenarzt," July, August, September, October, 1887) bases his article on twenty-four personal cases; and I myself remember having encountered at least a dozen. They occur by far more fre-

quently in women, as a result, as was formerly supposed, of the relaxation of the adipose attachments of the kidney by repeated pregnancies, assisted by some sudden strain. Landau's observations seem to confirm this ætiological relation. But Lindner denies that parturition has any special predisposing influence on a dislocation of the kidney, since he has seen movable kidneys in nulliparous women of every condition of life and of ages from sixteen to forty years. He believes that the predisposition to dislocation of the organ is based on a congenitally loose attachment, to which is added a general malnutrition; the exciting cause, then, lies in a sudden violent strain or a succession of moderate downward propulsions of the movable abdominal viscera (tight lacing, constipation, carrying heavy weights, etc.). In the majority of cases where sudden pain is felt in a certain part of the abdomen after some violent exertion, and examination reveals a floating kidney at that spot, Lindner believes that the kidney was movable long before, but suddenly became forcibly dislocated.

In all the cases of movable kidney which I have seen and which I have found reported in detail the mobility of the organ varied from a few inches below its normal site as far down as the superior pelvic strait. But few instances are recorded where the kidney descended below the iliac fossa, and none where it was contained completely within the pelvic cavity. When the organ is found floating about the brim of the pelvis it may easily be mistaken for a small, solid ovarian tumor or a pediculated fibroid of the uterus, both of which in shape may resemble a kidney; or, if on the left side, the spleen may be thought of. If the tumor is larger than the normal kidney, the diagnosis may be still more obscure. A careful bimanual examination of the pelvic organs, eventually even the introduction of the whole hand into the rectum under anæsthesia, and the discovery in this manner of the uterus and ovaries in their normal positions, will, of course, at once eliminate those organs from consideration; and the absence of the kidney from its normal position, as shown by bimanual palpation and percussion of the lumbar region, will aid in settling the diagnosis. The examination of the urine is of no avail as a diagnostic sign for floating kidney, since only in renal tumors (chiefly malignant) does bloody urine indicate disease of that organ, whether displaced or not.

When, however, there is no suspicion whatever of displacement of the kidney; when the urine is normal; when pain dating from a certain period is complained of in one side of the pelvis; when bimanual examination reveals a distinct, oblong, slightly movable, very tender, elastic body in the pelvic cavity where the pain is complained of; when the normal ovary on that side can not be felt and the uterus is found to be slightly limited in mobility but otherwise normal in size and position; and when, moreover, this oblong, sensitive, and slightly movable body in the sensation it imparts to the examining fingers corresponds exactly to an enlarged and adherent ovary and tube, the result of periophoritis—then, I say, the presumptive diagnosis is certainly in favor of the latter condition, and a failure to suspect or diagnosticate the intrapelvic tumor as a displaced, if not exactly floating, kidney may well be excused. Such a

case is the one I now wish to report. So far as I have been able to ascertain from a careful search through literature, the case is unique as regards both the peculiar position of the kidney and the operative treatment:*

S. P., twenty-one years of age, married, the mother of two children, the last fourteen months old, was admitted to my service in Mount Sinai Hospital on Tuesday, May 22, 1888, complaining of severe pain in the left ovarian region which, she stated, had come on after an accident (falling of her baby upon her) three weeks previously. On being questioned, she said that she had had a chill and fever at that time and been confined to her bed for some days. Menstruation normal; urine amber, acid, 1.020 specific gravity, negative. Bilateral examination of her pelvic organs without anæsthesia (which was unnecessary, as the abdominal walls were lax and thorough palpation was practicable) showed the uterus in normal position, its lateral mobility slightly impaired, the right ovary not recognizable; in the left side of the pelvic cavity, apparently touching the bottom of Douglas's pouch, there was an irregular ovoid, exquisitely sensitive tumor of about the size of a flattened orange, which was slightly movable in every direction, and which presented the characteristic feel of an enlarged ovary and tube bound together by adhesions. No attempt was made to push this body out of the pelvis, since no doubt was entertained of its nature. The diagnosis was verified by several other gentlemen who happened to be present.

As I was about to leave town for several weeks, and as the patient complained of a great deal of pain, I suggested to her to have the offending organs removed at once, to which proposal she readily assented. Accordingly, on May 25th, in the presence of Dr. John A. Wyeth and one of the gentlemen attending the New York Polyclinic, and assisted by the house surgeon, Dr. Howard Lilienthal, and the other members of the surgical house staff, I opened the abdomen in the usual manner. My first step was to feel for the right ovary and tube, which I found normal. I then passed my fingers down to the tumor, which was quite difficult to reach, as it lay on the floor of the pelvis; at first it seemed to be completely adherent, and I could find no place to begin enucleation. I remember saying to Dr. Wyeth that it felt just as though it were entirely covered by peritonæum. Still no suspicion occurred to me that the tumor might really be extraperitoneal, since my fingers failed to encounter the left ovary, and I had frequently met with apparently quite similarly adherent ovaries and tubes. Suddenly the adhesions seemed to give way about the center of the tumor, my fingers slipped into a small furrow, and the enucleation of the mass was rapidly accomplished. Finding some difficulty in lifting the slippery tumor through the incision, I grasped it with flat forceps, which tore out, and quite a flow of dark blood took place. During these manipulations I remarked that I had never before had to handle so peculiarly feeling a mass in that locality. Finally I succeeded in drawing the tumor out of the incision, and a glance revealed its character. It was the left kidney in a high state of venous engorgement.

I need not describe my surprise and almost, I may say, consternation. If the capsule had been intact, I should have at once returned the organ to its bed; but I had peeled the capsule as smoothly from the kidney as it could be done on the dissecting table. There was nothing to be done but to remove

* The case most similar to it which I have been able to discover is that of Polk ("N. Y. Med. Journal," 1882), where the left kidney was attached to the ovary and was removed by an incision parallel to Poupert's ligament. The kidney had not, therefore, descended to the pelvic floor. Its mal-position was supposed to be congenital.

the organ. Still I employed the precaution to feel for the right kidney, which I thought I felt in its normal position. I at first laid an elastic ligature around the pedicle to stop the profuse venous oozing from the forceps bruise; and then I transfixed and tied off the pedicle with silk, using the Staffordshire knot, cut off the pedicle without searing it, and, having satisfied myself that no vessels required separate ligatures, dropped it back and laid the folds of peritonæum over it. I then looked for the left ovary and at first could not feel it. At last I detected a small, flat body, bound down by adhesions to the posterior leaf of the broad ligament, and so covered as to be almost indistinguishable. The patient thus had been through an attack of periophoritis, as her history led us to surmise, and the limited mobility of the uterus was thereby explained. I decided to leave the left ovary, as I was afraid the manipulation and traction required to detach it and ligate the pedicle might do some injury to the stump of the kidney. The abdominal cavity was then carefully cleansed of coagula by sponging and flushing with warm Thiersch's solution, and the wound closed with silkworm-gut sutures. The operation had lasted about forty minutes, considerable time having been devoted to a careful toilet of the peritoneal cavity.

The patient came well out of the anæsthesia, which was by chloroform. Directions were given to draw the urine and measure its amount each time, also to examine it chemically and microscopically daily.

The condition of the patient for the first three days was that of depression or shock; the morale was bad; the pulse was small and high, usually 120, temperature 100° F., and respiration 28. There was some vomiting and she was nourished *per rectum*, chiefly with Rudisch's sarco-peptones. Immediately after the operation she was catheterized and 2½ ounces of urine were removed. Six hours later, 6 ounces were withdrawn. On the second day, at intervals of six hours, 4, 5, and 4½ ounces, respectively, were withdrawn; five hours later, 4 ounces of urine were passed voluntarily—in all, 17½ ounces in the twenty-four hours. Urine acid, 1.026 specific gravity; reddish deposit; albumin, 3 per cent.; a few pus cells, abundant urates, no casts. Treatment, caffeine, brandy, seltzer-water, and milk.

May 27th.—Temperature 99° to 100.8°, pulse 122 to 128, respiration 20 to 24. Passed 18 ounces of urine voluntarily. Kumyss, sarco-peptones, brandy and eggs in enemata.

28th.—Passed 24½ ounces of urine; one stool.

29th.—Twenty-five ounces and a half of urine.

30th.—Nineteen ounces and a half.

31st.—Nineteen ounces. Chicken-soup and crackers; pulse 96, temperature 99° to 100.8°, respiration 22.

The temperature and pulse gradually became entirely normal; the amount of urine voided increased to 31½ ounces on June 4th; bowels regular. Urine practically normal; no casts.

June 5th.—Stitches removed and patient moved from the private laparotomy-room into the general ward. Further recovery uninterrupted.

15th.—No pain and gaining flesh; out of bed. The weight of the kidney after five weeks' preservation in 50-per-cent. alcohol is 3 ounces 5 drachms. A microscopical examination showed nothing abnormal.

July 6th.—A vaginal and bimanual examination revealed nothing abnormal. Patient discharged well. The case after the third day passed under the care of my friend, Dr. B. Scharlau, who kindly acted as my substitute during my two weeks' absence from the city, and to his efficient supervision and the unremitting attention of Dr. Lilienthal I think the rally from the deep shock must be largely attributed.

Whether the left kidney actually slipped down into the pelvis at the time the patient complained of the severe pain in the left side, three weeks before admission, or whether it had gradually descended and for some reason only began to be troublesome at the time mentioned, it is impossible to say. Indeed, the history and the condition of the left broad ligament and ovary render it more than probable that the pain complained of three weeks before, attended by a chill and fever, was due to a localized pelvic peritonitis, and that the presence of the kidney in the pelvis was an entirely accidental complication. At first sight it would seem certain that the descent of the kidney must have taken place after the birth of the second child, fourteen months ago, since it is hardly probable that so delicate an organ as the kidney could have endured without speedy reaction the injury inevitably inflicted on it in its abnormal position by the child's head in its passage through the pelvic canal. An acute nephritis would more than probably have rapidly followed the confinement. For this reason I at first rejected the otherwise plausible idea that the malposition was congenital. But a curious fact has led me to reconsider this decision—namely, after the woman's recovery, one of her children, a boy of three years, was brought into the hospital with cholera infantum, and died, and at the post-mortem his left kidney was found displaced to the brim of the pelvis, although not so low as that of his mother. The hereditary tendency to floating kidney, therefore, seems not improbable. But we are not so much concerned here with the questions when and how the kidney got into the pelvic cavity as with the uncommon and unexpected fact of its being there without exciting the least suspicion as to its true character.

The question, therefore, is one of *diagnosis*, or how to enable us to distinguish between a retroperitoneal tumor (as in this case, the displaced kidney) and an intraperitoneal mass, the general feel and outline of both being similar to that peculiar to an ovary and tube enlarged and adherent together and to the neighboring tissues, the result of local adhesive inflammation. I am not aware that any of the usual diagnostic methods employed in these cases will enable us to make an absolutely correct diagnosis, except, perhaps, the introduction of the whole hand into the rectum under anæsthesia, combined with palpation with the other hand through the abdominal walls. But this measure is not devoid of danger either by overdistension of the rectum or rupture of pelvic adhesions, and is not likely to be employed unless the extraperitoneal situation of the tumor is suspected and a knowledge of its real character is indispensable.

Simple bimanual palpation will usually (but not always) permit us to decide whether the ovaries and tubes are normal (that is, if they can be felt); and, if the normal appendages can not be recognized, the probability always is that the mass felt to one side or the other, or on both sides, of the uterus is the more or less diseased appendages. What the exact nature of their pathological condition is—whether the tube contains serum, blood, or pus, or the ovary is polycystic or a hæmatoma—can not be determined until the abdomen is opened.

Lindner* reports a case of Lawson Tait's† where a right movable kidney was mistaken for an ovarian or tubal tumor, the error only being discovered at the laparotomy.

An additional source of error lies in the fact that women suffering from movable kidney complain of sacralgia, bearing-down pelvic pain, reflex gastric, cephalic, and other disturbances, usually supposed to indicate pelvic disease, but all disappearing after replacement or removal of the kidney.

If now the appendages are diseased, especially atrophied, and the broad ligament is contracted by more or less recent peritonitis, so that the ovary can not be distinguished by palpation, as in my case, I do not see how a correct differential diagnosis of the intrapelvic tumor can be made.

In this respect the only lesson to be learned from my case is that the possibility of the kidney's descending into the pelvis should always be borne in mind in diagnosticating and operating on intrapelvic tumors which present outward characteristics similar to the kidney.

Lindner‡ has collected thirty-six cases of removal of the displaced kidney, with a mortality of nine, or about 25 per cent. All the deaths occurred after the abdominal (intra-peritoneal) operation; the lumbar incisions were all followed by recovery. In such a case as mine, of course Hahn's method* of cutting down over the normal site of the kidney, pressing it back into place, and attaching it there by sutures passed through the circumrenal fat and the edges of the incision (nephrorrhaphy), would be impracticable, since I do not believe that the kidney could have been pushed out of the pelvis and back to the lumbar region.

REACTION; A GENERALIZATION.

By C. W. LYMAN.

IN the study of medicines and other therapeutical agents, such as heat, cold, or electricity, we examine principally what we call the reaction that they excite. In looking into the phenomena of certain diseases of a severe type, like cholera, typhoid fever, and yellow fever, at that point where the body spontaneously exerts itself to recover its lost grip; in the treatment of the state known to surgeons as shock, and in other conditions of extreme depression; or in gaining an understanding of the means by which a healthy and vigorous adult is to preserve his health and bring his powers to their best—a medical student or practitioner has to deal constantly with what is termed reaction.

Finding it to be a force in play in very diverse fields of the knowledge of his art and coming upon it at every turn in physiology, a thoughtful man will at some time ask himself the question to which this paper will attempt to make an answer, "What is reaction?" It is unnecessary to premise that to this question no concise or absolute sort of answer can be given. Of life, if it is asked "What is life?" there is no compact exact definition. Biologists collect and more or less arrange in classes its various observed phenomena,

activities, subjective sensations, its conditions and limitations. That is, they do this so far as they can, surrounded always by undiscovered or undiscoverable forces. Reaction also, a thing connected somehow very closely with the impalpable life principle itself, we can conceive of most plainly by collecting and reviewing some of its more significant and evident manifestations, in both healthy and diseased bodies. We shall find it, I think, a force with which a physician needs a most intimate and varied acquaintance, not alone in grasping the theoretical and learned sides of his art, but more particularly in applying practically and graduating and adapting those forces or agencies which are called collectively his *resources*.

Two or three uses of the word reaction in medicine deserve notice and differentiation as being almost opposite. First, it is applied to that innate energy of living and nervously active protoplasm by which it takes on in the presence of a change in environment or of a disturbing agent a countervailing activity of an opposed and opposite sort. As illustrations, take the quickening of the nutritive process and the heat production when the weather becomes cooler, the heightened force and frequency of the heart in the primary stage of the action of atropine, the sudden fall of temperature and abatement of symptoms that may occur at any time after the onset of typhoid fever, or the rise of temperature to and above normal and the general inflammations of the third stage of cholera.

Second, the term reaction is used to express the immediate resultant of an irritation, and not the effort, also called reaction, which might afterward be made to offset it. Thus, digitalis, for a few moments just following its exhibition, lowers the blood-pressure. When a current of electricity is thrown into a muscle's nerve we get at once a contraction which we call the reaction of the muscles to such and such a current. If this stimulus were repeated often, in time might come a reaction of another sort on the part of the nerve by which it would become tolerant, either from habitual resistance or from physiological exhaustion. Which it would be—that is, how soon exhaustion would succeed to resistance—would depend on the strength and frequency of application of the electricity and the vitality of the nerve. In either case there would be a lessened response to the same stimulation. The body sets up for a time a resistant reaction to many drugs if taken in *moderate* doses, though in the end it is undermined and exhausted by that exertion. This exhaustion may appear suddenly, as in the protracted use of arsenic and digitalis. Examples of this temporary resistance we see also in conium, opium, tobacco, coffee, strychnine, and bitter tonics. People of intelligence, however, are constantly confounding this relation, and mistake the exhilaration accompanying the outgo of their own vitality in this resistance for some new force which the drug is imagined to infuse into them. To some disease-germs the body's reaction of resistance may be permanent, or practically so; for example, to mumps, measles, small-pox, and their poisons. I prefer this view to the idea of a material element the supply of which the disease has exhausted; the latter requires too much imagination. Vaccination sets up a resistance which lasts for some years. Typhoid fever

* *L. c.* † "Birmingham Med. Review," 1885. ‡ *L. c.*

* A very complete article, with a list of cases of nephrorrhaphy, by Maurice Richardson, of Boston, has recently appeared in the "Boston Medical and Surgical Journal."

recovered from leaves a more or less permanent resistance. To malarial poisoning a resistance often comes by long residence. According to Dr. Thomas, some men become similarly acclimated to the poison or germ of gonorrhœa—that is, locally. When pus or infected fluids enter the circulation there is primarily a chill, which is the first reaction. Then comes a febrile movement which may in the second sense be called a reaction. On going out to sea, if the boat heaves and rolls badly, the immediate reaction of unusual motion on the brain gives the nausea known as seasickness. Let several days pass. The nervous system ordinarily reacts against this influence and permanent resistance or tolerance is established. Similar to the above-described immediate effects of things on the body is, in chemical parlance, the direct effect, called reaction, of one substance or agent on a second, as of acid urine on litmus-paper, sunlight on iodine, hydrochloric acid on binocide of manganese. There is here no following reaction of either resistance or exhaustion in the case of non-vital bodies, such as takes place where there is life to deal with. In only a few instances can the body in its entirety be acted upon like a chemical compound, once and for all. This is too often forgotten.

Finally, we say reaction in speaking of that state of collapse or physiological quiescence into which the body passes after some period of greatly heightened activity and excitation. A notable instance we see after pregnancy and delivery; or in the depression which immediately follows the excitement stages of belladonna, cocaine, eucalyptus, digitalis, alcoholic drinks, cannabis indica, or coffee. Similarly, after any strong mental exaltation or severe strain, a moment of great danger or of uncontrolled passion, there normally comes a depression or a lethargy of about corresponding intensity and greater or less duration. Or after a paroxysm of malaria, tetanus, or eclampsia, the same thing appears. Those two opposite sorts of reaction—namely, excitement and collapse—do indeed characterize so many diseases, succeeding one another or in some instances alternating many times back and forth, that good authority has made as a definition of disease, in a wide sense, “the substitution of spasmodic for uniform physiological action.” It is the same law that obtains in the moral nature.

I wish to review briefly the practical points for a physician connected with this very wonderful capacity for reaction in living bodies. Looking first at the reaction which a vigorous body shows under changes of environment, we see a most beneficent and singularly adaptable power, making life to an extent independent of changing outward circumstances. By an increased opposite activity of its own, a strong man's body will endure prolonged exposure to cold water or arctic temperatures and be itself undisturbed. In very high latitudes we are told the effort of reaction keeps the body in a state of exuberant activity for about three years. Beyond that it begins to be worn out. A certain hardy explorer in the Andes, with another man accompanying him, once waded six miles up the bed of an ice-cold mountain stream, shut in by vertical cañon-walls, up to the waist in the chilly water. He had no after-effects, but his more delicate comrade died a few days afterward of pneu-

monia. A strong constitution will adapt itself equally well to tropical heats, to the heat to which are subjected the puddlers around a puddling furnace, or even to that of a baking oven. It will thrive on the sea-coast or in the thin, dry air of high mountains. It will withstand a severe and often an astonishing amount of muscular exertion; it will go on for a time without natural food, without regular sleep, and almost without water, within limits. Beyond certain limits for each person, exhaustion results, and that not recoverable from, as in the case of the war-correspondent Archibald Forbes. But the limits of safety may be very wide, as we shall see. Now, while, on the one hand, in the case of sick and delicate persons, it is, as every one knows, the primary condition of recovery that they should avoid exposure to extremes of temperature, sudden changes in the weather or climate, and beware of overexertion, deficient or excessive food, loss of sleep, and mental excitement, their reactions from which are necessarily feeble, yet, on the other hand, it is important that persons in possession of health should train their bodies to meet a certain amount of vicissitude in these matters. The vital power of adaptation by counteraction, which is my first definition of reaction, needs exercise in all the functions of body and mind, and especially is it needed at the time when growth is being attained, beginning very gently in infancy and childhood, but increasing that exercise along with the natural increment of the body toward its maturity. Vitality itself seems to become greater where, by graduated exposures and strains, it is trained into its full capacity of vibration through its conservative reactions, as if it were a set of pendulums that gained weight by swinging through certain arcs, but grew thin and light if they hung too still. This has often been observed in the advanced and hale old age of those who, in the years of their prime, filled positions of high responsibility and great labor without actual excesses. Children can be so over-carefully reared as to have no resistance to adverse conditions, and to contract fatal illness from the first fall into a mill-pond, a meal of unripe fruit, or an over-exertion in sport followed by “catching cold.” A number of natural pregnancies are found to leave a woman stronger than her unmarried sister, other things being equal.

Exposure and abstinence it was which nurtured the rock-like strength, the endurance of frost, fasting, wounds, and marching in those stern warriors of ancient Germany whom the Roman generals and legions did not subjugate. The same invulnerable sort of constitution was similarly developed among the Norsemen and piratical Danes of later times, among the English tars in the days of sailing-vessels and British naval supremacy, the early American explorers and pioneers—like Clarke, Simon Kenton, and Boone, of Kentucky, or Governor Sevier, of South Carolina, who quite outdid their Indian adversaries in being superior to fatigue and exposure. And now comes a very important and noteworthy point. Men having bodies so trained have a capacity for digesting food after long privation; and for sleeping after intense and protracted fatigue, to a degree corresponding to their previous ability to do without either. I prefer to call this, too, reaction on the part of the whole vitality. It may be accompanied by accumulation of leuco-

maines, producing digestion and sleep. It would then be a question of increased power to hold and store these leucomaines.

But, taking the case of weak bodies, sick and poisoned bodies, and bodies severely damaged, it often happens that the physician must interfere with some aid of art because reaction is too long delayed, insufficient in intensity, or over-violent, or becomes exhausted and ceases before the balance is restored. For, contrary to much which has been written, on theoretical grounds largely, nothing is more certain than that the body when in serious trouble often does *not* use all its latent forces for its own good, does *not* employ them in the most desirable direction for a recovery of health. Stimuli which save life in the disorganization of shock introduce no actual vitality not already present in the body; but by artificial exercise they arouse and set agoing certain motions in the internal machinery which, once started, go on. A brief course of bitters for torpid digestion does this, and nothing else. A morphine-eater suddenly deprived of his drug and given nothing in place of it, before he regains healthy action suffers vastly more than if stimulants, sedatives, and hypnotics were employed to ease the suddenness of the change, and initiate a normal order of things. A high German authority insists that "alcohol, always alcohol," be the reliance in delirium tremens. Often a heart that is on the point of stopping forever in some severe case of poisoning or infectious disease may be stimulated into a transitory power till the stress of the general effort is past. The expectant plan of leaving nature unaided and undisturbed may have very great advantages at times. It is not everything. "There is such a thing," to borrow the words of Dr. Jacobi, "as letting bad enough alone, to the cost of the patient." Excessive reactions to be prevented or modified may be seen in the case of fevers when the temperature threatens to run past the danger point; or of a frost-bitten limb where snow must be rubbed on it for hours that the return to normal temperature be not so sudden and reaction consequently so uncontrolled as to destroy the vitality of the tissues by that excess. Deficient reaction may occur in a new-born child, in whom, as is well known, notwithstanding the rapidly increasing lack of oxygen in the respiratory center, it may yet fail to go into action. Here it is the imperative duty of the doctor to come to nature's aid, apply other stimuli to respiration, and start up reaction from other quarters. And illustrations might be multiplied indefinitely.

To secure a reaction soon enough, in the amount and of the sort that are needed, is often the most difficult undertaking to which a physician is called, and yet that in which success will give the most valuable results to life, for cases will be found to vary unaccountably. He needs to have at command all known general principles controlling reactions, but be ready to lay aside precedent and study each case as individual and unique. He must be *willing* to perceive what reaction does actually take place after the employment of a given measure, and then take advantage of it if favorable, but abandon it if unfavorable. It is found clinically that many reactions can be secured in disease from measures and substances the actions of which on healthy bodies

give perhaps no explanation at all of that obtainable on diseased bodies—thus, from alcohol in puerperal fevers; quinine in malarial disease in favorable cases; aconite in small doses in some throat affections and fevers; belladonna in the same, and according to some, in meningeal inflammations. A cup of weak coffee gives sleep in unnatural bedtime wakefulness after an evening nap; hyoscyamus is useful in some forms of insanity; small doses of opium, a drop or half a drop of the tincture, in constipation; minute amounts of mercury in some bone inflammations; ipecac in the vomiting of pregnancy, in gastritis, and in some diarrhœas.

Evidence for these employments is experimental mainly, and yet final, according to Dr. Peabody. The same clinical or inductive evidence is needed for each person in regard to the value of either climates or foods, and should be obtained regardless of superficial theory, for foods have another function besides supplying wastes. They determine processes by elements not in themselves nutritive; and what besides a trial shall discover for each human being what flavoured or stimulant elements in his food will set up the reactions needed in the constantly varying state of his body and its activities?

It will be found that individuals will differ widely as to how much or what sort of reaction will arise in them from a given drug, bath, climate, or other therapeutical measure brought to bear. Those must be selected, and in the amount which it is found they best react from. More stimulus than is sufficient for the reaction is always injurious. The latter should always be equal to the former, never fall below it.

120 WEST SIXTY-THIRD STREET.

THE SPINAL CORD: ITS REMOVAL.

BY A. H. P. LEUF, M. D., PHILADELPHIA,
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IN the "New York Medical Journal" for May 5, 1888, there appeared a brief paper by Dr. E. R. Axtell, of Cincinnati, on the difficulty of removing the spinal cord. The opening paragraph of that paper is inaccurate, and apt to mislead; it follows:

"Every pathologist who has attempted to remove the spinal cord has, no doubt, sighed as the magnitude of his work loomed up before him. No matter how skilled one may be with post-mortem implements, the present method of removing the cord has ever been and ever will be most tedious and laborious, and, until an easier method is found, our pathology of spinal-cord affections will be retarded; only those who are most patient, and with more time than the average pathologist has to spare, being able to derive fresh knowledge from study in this wide-reaching field."

The statement in the first sentence is certainly not correct, for more than one pathologist will bear me out in the assertion that the removal of the cord is by no means a work of magnitude, especially such as would evoke a sigh simply by contemplation.

In the remainder of the quotation the author errs again in supposing the removal of the cord to be "tedious and laborious," "no matter how skilled one may be with post-

mortem implements." Neither is it necessary to adopt a new method of removal before the operation becomes simplified. The old and customary method, if properly followed, requires no special patience and only a short time.

Again he says:

"... as a very general rule, the removal of the cord to the majority of pathologists is a herculean effort, and only done under the greatest stimulation.

"Every institution will furnish numerous instances in which most interesting cases of spinal-cord trouble have not been examined post mortem owing to the inaccessibility of the cord, or where a small portion was made to answer for the entire cord. Thus we are daily losing valuable contributions to the pathology of spinal troubles."

This is another too sweeping statement. To controvert it, I may be allowed to say that in none of the positions in which I officiated as pathologist for some years was there a failure during my tenure to examine a cord, if such examination was in the least indicated; in fact, I have removed many for purely anatomical and histological purposes for professional friends, students, and myself, and to me it never seemed so difficult a task as the removal of the brain, and that seemed easy enough. All will allow the supposition that there are other pathologists who can honestly make the same statement. It must, therefore, also be admitted that this last-quoted statement is too sweeping.

Another paragraph says:

"Could we but separate the spinal cord from its bony attachments—even at the loss of its coverings—would not much be gained? Once separating it, it could readily be withdrawn and examined. But how could such a separation be effected?"

Much would not be gained by removing the cord without its coverings, but, on the contrary, much would be lost, for it is important to see the membranes externally and internally, and also the inner wall of the canal.

It is next suggested to excise the cord from the cranial orifice of the vertebral canal by introducing a vertebrated hollow cylinder having a serrated edge at its entering end. After the brain has been removed, the instrument is placed around the upper projecting end of the cord, which is securely held while the cylinder is forced down the canal outside of the cord with a rotary motion, cutting the connections of the cord and the spinal nerve-roots on the way down. A "slight mechanism," not described, is to cut off the cord at its lower end. No account seems to be taken of the damage that would be done to the interior of the cord by the dragging and tearing upon the nerve-roots incidental to sawing them off with the lower serrated edge of a vertebrated cylinder. The tearing of the ligamenta dentata would also disturb more or less the histological relations of the cord. If this operation were a feasible one, it would be much better to pass the cylinder down outside of the dura, which would be possible after severing its attachment to the foramen magnum.

The paper concludes as follows:

"Thus could the cord be extracted most readily and without difficulty. The need of such a method is most obvious."

The first sentence seems just enough, but reconsideration suggests that any cylinder of adequate diameter to

freely include the transverse diameter of the cervical enlargement could not pass through the thoracic portion of the canal. The concluding assertion is amply negated by what has been said. The suggestion is ingenious, and creditable to that extent, but as a procedure in the dead-room it would never, could never, have any value to the pathologist. Moreover, it would be expensive and save very little, if any, time, and negative nearly all the pathological value of a cord so extracted, because of its incompleteness and the disturbance of histological relations.

The following method is the one which I have adopted after considerable experience in the removal of spinal cords: The instruments consist of a strong knife, a slender knife, a forceps, a saw, a costotome, and a pair of bone-nippers. The position of the body is important. It must lie face down, with the arms folded under the belly or lower edge of the chest, and the head hanging down over the end of the table. The object of this is to produce as far as possible an even arching of the back. The strong knife is then inserted just below the occipital protuberance and pushed down against the spinal vertebræ of the neck, whence the incision is extended over the vertebral spines in the usual way to nearly the base of the sacrum. Two corresponding parallel incisions, one on each side of the vertebral spines, are next made down to the laminae at their junction with the pedicles, at which point the knife naturally refuses to go any further. The muscles are *not* cut away, but the saw is now made to traverse the two cuts, resting with its outer side upon the pedicles and deep muscles of the back, while its edge is directed against the laminae close to their junctions with the pedicles. It is extremely important to keep the saw-blade at right angles to the laminae, and, as they change their direction or slope at different parts of the column, it is necessary to change the slant of the saw correspondingly.

Figs. 1, 2, and 3 show the relation of the laminae and saw at the cervical, thoracic, and lumbar portions of the column by way of elucidation and are self-explaining.



FIG. 1.—Diagram of the posterior arch of the vertebræ in the cervical region. *a* represents the direction of the saw against the lamina and resting along side the pedicle.

The sawing should be rapid and without fear of injuring the cord, for this lies loosely within the canal and is usually

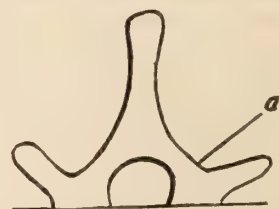


FIG. 2.—Diagram of the posterior arch of the vertebræ in the thoracic region. *a* represents the direction of the saw against the lamina and resting along side the pedicle.

surrounded by some fat. The saw never even injures the dura; at least it has never done so in my experience, and so I feel warranted in saying that even careless sawing is com-

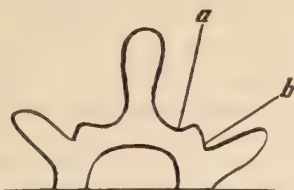


FIG. 3.—Diagram of the posterior arch of the vertebræ in the lumbar region. *a* represents the direction of the saw against the lamina and resting alongside the articular processes; *b* represents the same between the articular processes and pedicle, showing the necessity for more lateral deviation at this point; *a* is the best place for sawing.

paratively safe. It is best to begin this in the mid-thoracic region and extend it upward on each side to the atlas; then the saw should be reversed and the cut extended to the lower lumbar region. Care must be taken to keep the saw at right angles with the laminae, well against the pedicles and the deep muscles of the back, and to cut entirely through.

The next step is to cut through the supra-spinous ligament between the two most prominent vertebral spines. The upper spine is then seized with the costotome and readily lifted with the upper posterior arches as far as the upper cervical region, exposing the cord all the way. The lower portion is lifted in the same way. Very often the saw has not entirely done its work, and then the partially divided laminae are cut through with the costotome. One must not be afraid to well insert the lower end of this instrument in order to insure easy cutting of the bone. The cord and meninges easily give way to the entering blade.

Sometimes edges and spiculæ of bone project into the canal because of incomplete sawing, and these are quickly removed with the bone-nippers. The cord is then severed at its lower end, the dura held with forceps, and the smaller knife used to cut the spinal nerves, connective tissue, and upper end of the cord. This completes the procedure.

This method is rapid enough to meet any necessity, for I have frequently done it within ten minutes, and very seldom has it taken more than fifteen minutes. The time here mentioned can be vouched for by those who have repeatedly seen and timed the operation, though I really never hurried. Fair dexterity and quickness of movement are all that is required to equal this time for taking out the cord. I am well aware that it not infrequently requires an hour and a half to remove the cord, but this is because it is improperly done.

The objection to the anterior method—i. e., when the bodies of the vertebræ are cut off—is the difficulty in getting out the entire cord, even if the incision is extended up the neck to the chin, and this is always very objectionable because it disfigures the body. Another objection is that it may cause an unnatural limberness of the trunk, noticeable if the body should happen to be lifted by friends or relatives.

In conclusion, the fact that Dr. Axtell should have felt justified in writing his suggestive paper—in fact, felt a need for it—is indicative of the defective work of so many of our

pathologists and pseudo-pathologists. He has done well to call attention to the shirking of work because it is supposed to be hard. May we hear from him often.

THE CHIAN TURPENTINE TREATMENT OF CANCER.*

By DANIEL LEWIS, M. D.,

SURGEON TO THE NEW YORK SKIN AND CANCER HOSPITAL.

CHIAN TURPENTINE, the internal administration of which as a remedy for cancer has been recently recommended anew by Professor John Clay, obstetric surgeon to the Queen's Hospital, Birmingham, England, is a product of the *Pistacia terebinthus*, a tree which in its native island of Scio, in the Mediterranean, grows to the height of thirty or forty feet. The gum is obtained from incisions into the bark, and the many impurities which it contains are composed of sand, leaves, straw, and particles of the bark and fruit. As Professor Clay insists that its efficiency depends upon the genuineness of the drug, it is well to carefully consider the following description from Flückiger and Hanbury's "Pharmacographia":

"Chian turpentine, as found in commerce and believed to be genuine, is a soft solid, becoming brittle by exposure to the air; viewed in mass, it appears opaque and of a dull brown hue. If pressed while warm between two slips of glass, it is seen to be transparent, of a yellowish brown, and much contaminated by various impurities in a state of fine division. It has an agreeable, mild terebinthinous odor, and very little taste. The whitish powder with which old Chian turpentine becomes covered shows no trace of crystalline structures when examined under the microscope."

It is believed that Strassburg and Venice turpentine and Canada balsam are often substituted for it, which can usually be easily detected by applying the tests as to taste, odor, and appearance given above.

The turpentine, as used by Clay in his first reported cases ("Lancet," March 27, 1880), was given in the form of a pill, containing three grains, combined with two grains of flowers of sulphur. Two of these pills were given every four hours for many weeks, and in some cases for nearly a year. It was found that in some instances the turpentine in the pill form was not well digested, and the latest recommendation of Professor Clay is to administer it in an emulsion made as follows:

One ounce of the Chian turpentine is to be dissolved in two ounces of pure sulphuric ether. This solution has been termed the turpentine essence, and the emulsion is made by adding one ounce of this essence to a mucilage of acacia (one ounce and a half of powdered gum arabic and water to nine ounces), making a ten-ounce mixture, a teaspoonful of which contains about three grains of the drug. A dessertspoonful, it will be observed, contains the same amount of turpentine as the two pills which were previously recommended. In some cases resorcin has been added in doses of a grain. This emulsion is not of a dis-

* Read before the Medical Society of the State of New York at its eighty-second annual meeting.

agreeable taste, as nearly all of my patients who are under the treatment testify.

Tonics have been used when indicated. In some instances local applications have been made, in others this internal remedy alone has been employed. When it has been taken for about three months it should be omitted three days in every fortnight. The sulphur is often given in a separate pill, especially in cancer of the uterus and rectum. I have given this description of the plan and exhibited the preparations in order that we may have an accurate knowledge of what this Chian turpentine treatment really is.

We are all familiar with the statements which Professor Clay has repeatedly made concerning its efficacy. He has seen a number of complete cures, not only of uterine cancer in advanced stages, but also of cancer of the rectum and surface epitheliomata. In cancer of the breast he reports marked improvement of symptoms and complete arrest of the new growth.

No report has yet been published, as far as I can learn, stating the precise changes in the tumor, but he maintains that the primary action is upon the periphery of the growth. The plan has been tested in the London Cancer Hospital, and, after a tolerably thorough trial, condemned by Dr. Marsden and Mr. Purcell. Another trial has recently been made, however, and one of the surgeons of the same hospital declares the Chian turpentine to be a very useful remedy in many cases.

In the "Lancet" for November 22, 1887, the editor says there can be no doubt that Professor Clay's reports of cures are trustworthy, and that it can hardly be possible, with a man of his large experience, that they were *all* cases of mistaken diagnosis. He advises a continued trial of the remedy.

The drift of pathological research is now strong in the direction of a specific origin of the disease, to which theory Sir James Paget expressed a qualified preference in his recent "Morton Lecture."

To cure by internal treatment may, in the next decade, become as possible in cancer cases as it has long since become in syphilis.

My own experience is still too limited to be of much value. Several patients in my service at the Skin and Cancer Hospital have been under the treatment for varying periods—from one to six and eight months. All take the remedy well, by giving them a brief rest occasionally. A cancer of the uterus has been greatly benefited; pain has decreased, hæmorrhage has ceased, and granulations have become healthy.

A large epithelioma of the face has decidedly changed in character. In some no effect whatever has yet been noted. We shall watch the cases with great interest, and give a full report to the profession.

62 PARK AVENUE.

M. Charcot and the Emperor of Brazil.—Sometimes, says our Paris correspondent, doctors are properly paid for their services, as witness the case of Professor Charcot, who was called over to Milan to see the Emperor of Brazil. It was a two days' service. Milan is twenty-four hours from here, and Dr. Charcot was paid 40,000 francs—say \$8,000; \$2,000 a visit is not bad, even for a Charcot.

Correspondence.

LETTER FROM LONDON.

A Successful Operation on the Spinal Cord.—The Use of Electricity in Gynecology.—The Relationship between Alcohol Addiction and Disease.—The Death of Dr. Milner Fothergill.

LONDON, July 3, 1888.

DR. GOWERS and Mr. Victor Horsley have redeemed the promise they made some months ago, and have given the public a full account of their case of successful removal of a tumor from the spinal cord. The patient was a man, aged forty-two, who had suffered for three years from localized pain beneath the lower part of the left scapula. The pain was at times so intense that the patient's manner was such as to suggest to several who saw him that he was insane. Four months before the operation the legs became weak, first the left then the right, and the weakness gradually increased to absolute paraplegia. When Dr. Gowers first saw him there was both motor and sensory paralysis up to the level of the sixth dorsal nerve, with intense spasm in the legs, foot-clonus and rectus-clonus. There was retention of urine, with cystitis. At the level of the sixth dorsal nerves there was severe pain encircling the trunk, greater on the left side and increased by movement. The diagnosis was compression of the cord by a tumor arising either from the vertebræ or from the spinal membranes. An operation having been determined upon as affording the only prospect of relief, Mr. Victor Horsley, whose great reputation in dealing with cerebral cases justified his selection, was asked to undertake it. This was accordingly done, and the growth, which proved to be a myxoma, was removed under strict antiseptic precautions. The wound healed by first intention, and the patient gradually lost all pain, and recovered motor power and sensation in his legs. Ultimately his recovery was so complete that at the time the case was reported he could walk three miles without fatigue. Owing to the novelty of the operation, there was but little discussion on the paper. There can be no doubt that we shall soon hear of the results of other like operations, as cases of a similar nature are by no means rare, and have hitherto been regarded as quite without the pale of the healing art.

There has been a prolonged and vigorous debate at the Obstetrical Society on the use of electricity in gynecology, which has left us much where we were, the advocates having stated their case, chiefly in papers presented by Dr. Steavenson and Dr. Gibbons, the opponents, including several of the leaders in that department, not considering that the results were better than were obtained by other methods. The purposes for which it is maintained that electricity may be usefully employed are the relief of stricture of the female urethra, stenosis of the os uteri or cervical canal, chronic cervical catarrh, chronic metritis, and fibroid tumors of the uterus, and the control of hæmorrhage in cancer of the uterus. The chief objection to the more extended use of electricity in these cases would appear to be that it requires more skill in its application than the ordinary practitioner can ever hope to attain, and that when applied by an electrician it is imperative he should have a good practical knowledge of uterine disorders. In both respects Dr. Steavenson and Dr. Gibbons are thoroughly well qualified to carry out the treatment, but there are not many practitioners who unite in their own persons the needed qualifications. The results obtained by these two observers show, however, that in proper hands electricity is a powerful and valuable agent.

The Collective Investigation Committee of the British Medical Association has put forth a report upon the connection be-

tween habits of intemperance and disease. In the summary of conclusions it is stated that habitual indulgence in alcohol tends to shorten life, that in the production of cirrhosis and gout alcohol plays a very important part, and that it probably plays a special part in the ætiology of chronic renal disease. These conclusions will, I presume, be regarded by everybody as correct, but the committee further tells us that the tendency to apoplexy is not in any special manner induced by alcohol, a statement directly at variance with the previous one about chronic renal disease, for surely, if there is a well-ascertained fact in morbid anatomy, it is the close connection between arterial degeneration and chronic renal mischief. Again, we are told that the mortality from pneumonia, and probably that from typhoid fever also, is not specially affected by alcoholic habits. Such an assertion, contradicted by the most every-day experience, is a good illustration of the well-known saying that you can prove anything from statistics. The non-alcoholics, however, do not have it quite all their own way, for the report tells us that there is some reason to think that alcoholic excess may delay the production of malignant disease, and that, in the young, alcoholic liquors seem rather to check than to induce the formation of tubercle. To these advantages in favor of alcohol I might add another, which came out in a discussion on tobacco amblyopia, at a recent meeting of the Ophthalmological Society, when there was a tolerably general agreement that drunkards were less liable to this affection than total abstainers, and that, when they did suffer, their condition was more amenable to treatment.

By the death of Dr. Milner Fothergill, a well-known medical writer disappears. An immensely corpulent man, he had, I believe, for some time past suffered from perforating ulcer of the foot or feet; he died from gangrene of the feet, and, I believe, was the subject of diabetes. He was a very ready writer, and his books were always readable, though, from a scientific standpoint, they added little or nothing to our knowledge.

A New Form of Infectious Pneumonia.—"At the recent Medical Congress in Italy," says the "British Medical Journal," "Professor Cantani presented a communication on a new form of infectious pneumonia which had been observed by him. The clinical history showed broncho-pneumonia, which had been preceded by a diffuse bronchitis, with remittent and very pronounced fever, considerable emaciation, and great enlargement of the spleen. The disease was contagious, and was a primary affection of the bronchi, which extended downward through the lung, and sometimes over the pleura and upward along the trachea, and even to the larynx and pharynx. Bacteriological examination revealed the presence of numerous diplococci, and especially streptococci, similar to those found in erysipelas. The pure cultivations did not, however, produce erysipelas when injected subcutaneously. When they were injected under the skin of a rabbit's ear, only swelling and reddening at the site of puncture were produced. All the cases ran a favorable course."

Athetosis in an Infant.—The "Lancet" says: "Athetosis of genuine sort is a clinical rarity in infancy. MM. Comby and Féréol have recently described cases at the Société médicale des hôpitaux. Comby's case occurred in a female child, aged twenty months, badly fed and rachitic. Various movements were noticed in the toes of the right foot, also in the fingers of the right hand, flexion and extension, abduction and adduction going on incessantly, slowly, without jerkiness, but in exaggerated fashion. The hemiathetosis did not involve the face. General sensibility was intact, and the eyes exhibited no sign of squinting or nystagmus. There was no muscular wasting. The movements began at eight months, were preceded by generalized severe convulsions, which lasted many days. The convulsions left behind them right-sided hemiplegia, with athetosis. Cases in which infantile hemiplegia with hemispasm are after several years followed by choreic movements are by no means rare."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JULY 21, 1888.

THE SOCIAL POSITION OF THE MEDICAL PROFESSION.

DR. THOMAS WILLIAM THURSFIELD, of Leamington, England, considered the subject of the present social position of the medical profession in his country, in a presidential address lately read before the Birmingham and Midland Counties Branch of the British Medical Association, which appears in the "British Medical Journal." He stated it as an admitted fact that in England the doctors held a place in public esteem inferior to that of either the lawyers or the clergymen. This we believe is not the case in the United States, but it must be confessed that even here the medical profession does not stand as it ought to stand. Perhaps it must further be admitted that our advantageous relative status is not so much due to any superior merits of ours over those of our English brethren as to the inferior favor with which Americans in general look upon their lawyers and their clergymen. But possibly something is due to the fact that all of us have a degree, such as it is, and that there is no class among us corresponding to the so-called apothecaries of the United Kingdom.

It is quite as true here, however, as in England that the medical profession is in need of greater esteem than it now enjoys, and the means by which the need may be satisfied are probably not essentially different in the two countries. It is edifying to note, therefore, the items to which the Leamington physician attributes the present state of things, and his suggestions toward its amelioration. Among the factors conspiring to hold the profession down he first mentions the imperfect preliminary education of the English medical student as compared with the student of law or theology, and, secondly, his defective professional education. Probably both these disadvantages are absolutely greater here than in England, but relatively not so great; for we are confident that American medical students are generally more advanced in their preliminary studies than their compatriots in the schools of law and theology, and it seems as if the disparity were yearly growing more decided. For this we can take credit to ourselves, for there is no retrogression in the law or in the Church. In the course of professional training, too, we are constantly advancing, out of proportion apparently to the progress made in the schools of the other professions.

Dr. Thursfield then enumerates professional quackery and dishonesty, concerning which it is difficult to say whether they prevail here more or less than in England; professional jealousy, which we fear is the same the world over; professional etiquette (meaning mainly the disposition often shown by physicians to throw obstacles in the way of their patients' obtaining other advice), which maintains "a code of laws which is 'not

understanded of the people,' and which is believed by them to be made entirely for the benefit of the members of the medical profession at the expense of the public," and therefore proves "a constant source of distrust and dislike"—a condition that is probably quite the same here as in England; deficient public spirit, giving rise to "the political powerlessness of the medical profession," a matter in which we can hardly profess to be better off than the British profession; and the multiplication of "provident" dispensaries and out-patients—evils that are still of minor proportions with us, but threatening to grow into abuses of alarming magnitude. It is true that the last-named evil strikes more directly at physicians' prosperity than at their social standing, but none the less effectively, for whatever saps the prosperity of the profession goes far to do away with its attractiveness to the better class of young men, and the results it needs no inordinate brilliancy to foretell.

In general, medical men, like those of any other class, are sure to take precisely the social position that they deserve, and such an enumeration of their shortcomings and disadvantages as Dr. Thursfield has furnished points clearly enough to their rectification; but he adds certain specific suggestions that are worthy of attention. In the first place, he would insist upon a good classical education, which, in our opinion, he correctly calls "a priceless possession"; then he would lengthen the medical curriculum to five years, and increase the facilities for clinical teaching. His further recommendations hinge upon the substitution of a proper *esprit de corps* for the absurdities of etiquette, and upon a less oligarchical management of medical corporations.

QUEER COMPLICATIONS IN GENERAL BOULANGER'S CASE.

It is truly a sad subject for contemplation when misfortunes are piled, Pelion upon Ossa, upon the head of a brilliant and popular man. Such a one is General Boulanger, and recent reports as to his physical and political condition seem to indicate that he has reached the lowermost point of his downward course. But yesterday he was the idol of a large portion of the French people; to-day he lies on a sick bed, his life trembling in the balance and with a grisly danger brooding over him. The downfall started by the "Boulanger March" has been rapid and complete, and has now culminated in the dangerous and painful wound inflicted by a civilian by the purest bad fortune. But we are now informed by a foreign correspondent of the New York "Sun" that various "unpleasant complications" which may impede his recovery are hovering about him, awaiting a favorable opportunity to fix their pathological talons in his hapless throat. The horror of the "less familiar complaint, embolie, caused by clots of blood in the bronchial tubes," and the weird, ghastly, hideous doom of what is "still rarer, suffocation by hæmaturia into the respiratory channels," are staring him in the face. But the imminence of this last calamity arouses grave misgivings as to the conventionality of the brave General's anatomical arrangements. It is absurd to believe that the punctured wound in the carotid region would reveal the anomalous conditions

which must exist, for it is safe to assume that the innate chivalry of the Frenchman would prevent the possibility of the suffocation of even a bitter political enemy being caused by any hæmaturia other than his own. The only valid hypothesis we can suggest is that possibly an examination of the sputa has revealed, instead of tubercular bacilli or those of "embolie," hyaline casts and triple phosphates. The correspondent alludes to this possibility with a cold-blooded nonchalance that speaks but poorly for his humanity, but too many visions of what that complication involves come up before the mind's eye of the physician, and send a thrill of pitying horror through his being.

We have heard unmoved of men throwing up their immortal souls by an emesis so thoroughly whole-hearted that their rejected spiritual essence was dyed a navy blue or a cardinal red, according to the color of their hosiery, but the thought of expectorating one's Malpighian bodies and removing from one's interdental spaces long snarls of uriniferous tubules with a tooth-pick after each fit of coughing, together with the necessity of keeping the cuspidor in the closet, causes the most hardened among us to shudder. But, should the patient escape this threatened danger, what a future lies before him! His calculus must be removed by tracheotomy, and his bronchi irrigated when symptoms of cystitis develop. In one of such impulsive nature, the polyuria of nervous excitement will literally submerge the molars, and, if diabetes should occur, no one could distinguish it from pulmonary oedema. Poor Boulanger! Though powerless to help him, we can still sympathize with him, and we sincerely hope that our contemporary's informant has been mistaken.

MINOR PARAGRAPHS.

STEAMSHIP MEDICAL SERVICE.

In a letter to the editor of the "Medical Record," Dr. Frank Trester Smith, of Chattanooga, Tenn., pleasantly describes the medical service on the Dutch transatlantic line. Much that he finds to say might apply with equal force to the service on almost any line of passenger steamships, but it strikes us that the Dutch company is more than usually parsimonious in dealing with its medical officers. Speaking of steamship medical service in general, Dr. Smith cites a saying to the effect that "the sea will spoil any doctor in three years." This is not strictly true. Doubtless the routine of life on shipboard is ill adapted to bring out a medical man's best qualities, but it is well known that there are many ship's surgeons who are excellent practitioners, and it is a fact that some of the most successful physicians pursued a seafaring life for many more than three years in the early part of their career. Dr. Smith's letter is very entertaining, but it is curious that he calls porpoises "fish," and by implication classes whales also in the same list.

SMALL-POX IN TENNESSEE.

In a recent issue of its "Bulletin," the State Board of Health of Tennessee calls attention to one of the drawbacks that accompany whatever advantage may accrue to a community by an increased growth by immigration, namely, the more frequent importation of infectious diseases. The occurrence that gave rise to the board's remark was the simultaneous outbreak of small-

pox at two widely distant points within the State in the month of May. The board properly suggests that physicians should be incessant in urging vaccination, and says that such a condition of things as the one in question "may any day be duplicated in any railroad or river town in Tennessee."

THOMAS'S OPERATION FOR BENIGN MAMMARY TUMORS.

THE operation proposed a few years ago by Dr. T. Gaillard Thomas, of New York, whereby many benign tumors of the breast could be removed without leaving an unsightly scar, has not been given a very extensive trial. It has lately been employed in five instances, however, by Dr. Alexander Jamieson and Dr. Boone, of Shanghai, China, the former of whom speaks favorably of it in the "Lancet."

INTUBATION IN FRANCE.

M. BOUCHUT, who originally proposed *tubage* of the larynx, but was unable to accomplish its acceptance by the profession, seems to have realized that Dr. O'Dwyer has finally succeeded in the undertaking, and he writes to the "Gazette hebdomadaire des sciences médicales de Montpellier," urging further trials of the operation in France. It is natural that he should express, as he does, a preference for his own instruments over those made in America, but it is hardly likely that this predilection of his will lead to the suppression of Dr. O'Dwyer's tubes.

THE HIGH MORTALITY OF AN ENGLISH TOWN.

THE Manchester correspondent of the "Lancet" comments upon the recent mortality returns of that town, which was at the rate of 27·2 in a thousand of the population for the year 1887 according to the local health officer, and 28·7 in a thousand according to the Registrar-General. It appears that the rate is increasing, and the writer expresses the hope that, attention having been drawn to the increase, more energy may be shown in the sanitation of the town.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 17, 1888:

DISEASES.	Week ending July 10.		Week ending July 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	8	5	18	2
Scarlet fever.....	77	19	103	15
Cerebro-spinal meningitis....	5	2	5	4
Measles.....	195	22	244	16
Diphtheria.....	103	32	137	41
Small-pox.....	0	1	3	0

The Health of New York City.—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, July 17th: Typhoid fever, 40 cases and 12 deaths; scarlet fever, 460 cases and 93 deaths; cerebro-spinal meningitis, 21 cases and 16 deaths; measles, 898 cases and 84 deaths; diphtheria, 481 cases and 147 deaths; small-pox, 13 cases and 2 deaths.

Changes of Address.—Dr. William Oliver Moore has moved to No. 128 Madison Avenue. Dr. George H. Bosley will spend July and August in the Catskills as physician at the New Grand Hotel.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 14, 1888:*

MARTIN, WILLIAM, Assistant Surgeon. Ordered to the Marine Rendezvous, San Francisco, Cal., and to attend officers of the Navy and Marine Corps not otherwise provided with medical aid.

AUZAL, E. W., Assistant Surgeon. Detached from duty at the Marine Rendezvous, San Francisco, Cal., and special duty there, and ordered to the Naval Academy.

Society Meetings for the Coming Week:

WEDNESDAY, July 25th: Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Gloucester, N. J., County Medical Society (quarterly).

THURSDAY, July 26th: Cumberland, Me., County Medical Society (Portland).

OBITUARY NOTES.

T. Matlack Cheesman, M. D., who had recently retired from active practice in New York, died at his home, in Ridgefield, Conn., on Saturday, the 7th inst., in the sixty-fourth year of his age. The deceased took his medical degree from the College of Physicians and Surgeons in 1859. He was a member of the Academy of Medicine and of the Medical Society of the County of New York. He was a son of the late Dr. John C. Cheesman. Dr. Cheesman led a busy life for many years as a family practitioner, and was highly esteemed in the profession and in the community. For a number of years he was the surgeon of the Seventh Regiment, N. G. S. N. Y. He was a gentleman of remarkable urbanity and humor. Although his quiet mode of life prevented his being widely known beyond the limits of New York, his personal qualities made him many close friends.

William H. Maxwell, M. D., a retired New York practitioner, died on Tuesday, the 17th inst. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1838. At first he practiced for a short time in Syracuse, but the remainder of his long and creditable professional career was followed in New York.

Letters to the Editor.

KEFIR.

MOUNT VERNON, N. Y., July 4, 1888.

To the Editor of the New York Medical Journal:

SIR: On reading the title, "Dexia-Kefir," of Dr. Liell's article, in the Journal for June 30th, I hoped to be enlightened regarding the meaning of the prefix "Dexia," but I knew as much about it before as I know now. The impression, however, that is gained is that it means a preparation made with skimmed milk. If not, why does Dr. Liell make such a statement as the following? "Ordinary cows' milk, when given by the stomach, forms a more or less dense curd, rendered all the more insoluble by the fat which forms a *greater part of its bulk*." Now, this blow at the fat, which we all know is not the greater part of the coagulum of milk, must be aimed with a design to make us believe that any preparation deprived of the milk-fat would thereby have its dietetic value increased, and this is decidedly not the truth.

The author's use of the word "predigested" needs no com-

ment, but "a peculiar fungus ferment, called kefir, a plant indigenous to the Caucasus," does need some explanation. This peculiar ferment is not a plant in the true sense of the word, but it is "peculiar," and its history is interesting. After Struve first called attention to it, Kern, in 1882, contributed an article in the "Bot. Ztg.," entitled "Ueber ein Milchferment aus dem Kaukasus," and he described the masses now known as kefir, stating that the source from which the Caucasians obtained them was a mystery. Other writers, notably Hueppe and De Bary, took up the subject, and the beverage prepared from this ferment became quite popular, and, as in the case of all popular medical mysteries, notwithstanding the fact that the source of supply was apparently an unsolved problem, the market was well supplied with the ferment. These kefir grains are described by Crookshank, in his "Manual of Bacteriology," as the *Bacillus caucasicus*, "rods forming two spores, one at each end, otherwise similar to the *Bacillus subtilis*. They occur in the form of whitish lumps in company with the *Saccharomyces mycoderma*." De Bary, in his lectures on "Bacteria," says: "The hay bacillus skum is properly a zoogloea with a special characteristic form; formations more or less like it are found often enough in fluids containing decomposable bodies. Highly characteristic zoogloea developed in a fluid are the 'frog-spawn bacterium' of the sugar factories, and the 'bacterium of kefir.'" Thus it will be readily seen that this ferment is not a plant, but a mass of diseased germs, and the source from which it is derived—namely, the dirty skim-milk sacks of the Caucasian mountaineers—would of itself indicate what the mass really was, namely, zoogloea, similar to mother of vinegar and like bodies that are found in old decomposing fermented fluids.

Why this mass of sprouting fungus, numerous forms of bacteria, and other dirt derived from the dirty skim-sacks of a dirty, half-civilized people, should be used by us perhaps Dr. Liell can tell; I can not. The doctor says that with the use of this ferment "both a lacteous and an alcoholic fermentation are set up." Now, as I understand the fermentation of milk for food, the lacteous fermentation must be avoided, because it is this latter form of fermentation that takes place spontaneously in milk exposed to the atmosphere, and always precedes the putrefactive and the other changes that produce the dangerous ptomaines; and thus, in fermenting milk, just in proportion as the sugar is converted into alcohol is the value of the preparation for food increased, because the formation of the dangerous alkaloids is thus avoided. And this leads us further into the history of kefir. Those men in France and Germany who had contributed to the literature of the subject recognized the foregoing facts when A. Levy came forward and stated that, if fresh milk was bottled, and shaken vigorously while the casein was coagulating, a larger amount of alcohol would be formed than would be formed in the same amount of milk by the addition of kefir grains. After this discovery was announced Professor Schmiedeberg verified it, and De Bary, who had taken so much interest in the subject of kefir, made the following statement: "A. Levy, of Hagenau, has recently discovered that the effervescing alcoholic kefir may be obtained without any kefir grains simply by shaking the milk with sufficient violence while it is turning sour. A trial convinces me of the correctness of this statement; our former explanation, therefore, must be abandoned, and there is no other ready at present to take its place. But the case is full of instruction for our warning."

This and other contributions in the same tone killed the kefir business on the European continent, and, with the large amount of the "peculiar" and mysterious ferment on hand, something had to be done. So the French and German kefir companies are coming here, and expect to use among us the old exploded European medical bolsters which have all been called in

on the other side. A few medical contributions on the subject have been published in this country, but I am inclined to think that, if the authors will look into the subject carefully, they will save themselves the pain of renunciation.

E. F. BRUSH.

EXTRAORDINARY TOLERANCE OF MORPHINE IN AN INFANT.

244 WEST FORTY-SECOND STREET, July 10, 1888.

To the Editor of the New York Medical Journal:

SIR: On September 5, 1887, I attended a lady at the completion of her third pregnancy. She gave birth to a girl apparently healthy. The father and mother were each twenty-five years old, and both were healthy. The boys, aged respectively two and four years, are healthy. When two months old, the girl began to show symptoms of hydrocephalus, and became very nervous and irritable. To overcome this, I gave her drop doses of tincture of belladonna, in water, increasing the amount gradually to ten-drop doses. She was taking at the same time five-drop doses of syrup of hydriodic acid. This was increased to teaspoonful doses at bedtime. When the child was six months old, I was advised by a physician whom I consulted in the case to give a thirty-second of a grain of sulphate of morphine at bedtime. This seemed to do well for a week or more; then it had to be increased so that at the age of seven months the child was taking quarter-grain doses. The doses of morphine were gradually increased till at last the child was taking ten grains a day, and still crying for more. She died on May 31, 1888, under the influence of chloroform administered by a nurse. Her age was eight months and seventeen days.

A few years ago the late Dr. J. L. Little reported a case in which a boy of eight years, having a diseased knee joint, took seven grains of morphine daily. If any physician has observed greater toleration of this drug in a child less than twelve months of age, I should be glad to hear from him.

WILLIAM M. McLEARY.

Proceedings of Societies.

KENTUCKY STATE MEDICAL SOCIETY.

Thirty-third Annual Meeting, held at Crab Orchard Springs, Wednesday, Thursday, and Friday, July 11, 12, and 13, 1888.

The President, Dr. J. G. Brooks, of Paducah, in the Chair.

THE attendance was large, and the papers and discussions were of an unusually interesting character. Among them were the following:

Progress in Gynecology.—Dr. L. S. McMURTRY, of Danville, read a report on this subject. He referred especially to the progress in abdominal surgery, and reported three very interesting and successful laparotomies for tubercular peritonitis. He reviewed the literature of the subject carefully and gave statistics of thirty-six operations for tubercular peritonitis, with only six deaths. He had cleansed the abdomen carefully with a weak solution of bichloride of mercury, and in every way observed rigid antiseptic and aseptic precautions.

Dr. W. H. WATHEN, of Louisville, said that he had been very much impressed with the report; the results were indeed gratifying, and bore testimony to the correct method of treatment pursued. The speaker was interested in the subject especially, because he had been studying the literature relating to it very

closely, and had recently observed the reports of operations that were of great interest. He thought it was positively demonstrated that abdominal section in tubercular peritonitis was the correct treatment, and the only treatment that one could expect good results from. Laparotomy in septic peritonitis was attracting the attention of the gynecological surgeon; but whether it was to be followed by results comparable in success with those following abdominal section for tubercular peritonitis, experience alone must decide, as but few operations had been performed. But, if there was a legitimate field for experimentation to develop the value of a surgical procedure to cure disease, it was admissible here; for the reason that septic peritonitis was nearly always fatal in a very short period, it mattered not in what form the disease arose. When puerperal peritonitis was well developed, and there was well-marked tympanites, the disease tended almost certainly to death. He believed that here was a legitimate field for the gynecological surgeon to give abdominal section a test. The speaker had recently, in consultation, witnessed a case of this sort, in which he could only advise, and in which he regretted that the operation had not been performed, because the case was otherwise incurable, and the opening of the abdomen might have cured the patient. He desired to call attention, however, to the reckless haste of many members of the profession to open the abdomen in cases where the operation was in no sense indicated, the operator being ignorant of the pathology or diagnosis of the disease, and controlled by an ambition to record another case of abdominal surgery. Success in abdominal work was certainly the crowning glory of modern surgery; but there was not a man in the medical profession of extended experience relating to this subject, or who had read its literature, who was not familiar with the fact that the abdomen was cut open by persons who were not familiar with the pathological conditions that existed within the abdominal or the pelvic cavity, and who were incapable of making a perfect diagnosis. Where the operation to remove a tube or an ovary was not positively indicated, it could do no good, and might result in the untimely death of the patient; and there was no other department of abdominal surgery that was carried to such an extreme. He referred especially to cutting open the abdomen to remove healthy tubes and ovaries, because there were a few vague neurotic symptoms which had not yielded to an imperfect treatment; or to cure epilepsy, which had no direct or positive relation with the generative organs—the destruction of the distinctive organs of a woman to satisfy an imperfect diagnosis and a faulty pathology or the ambition of the operator; the removal of an important part of woman's machinery, which regulated the symmetrical and harmonious action of the various organs of her body; a woman's life, as it had been expressed by Dr. Jackson and Dr. Bigelow, poised between heaven and earth, without the possibility of doing any good; a woman's life sacrificed on the operating-table. Now, the trouble was, men were attempting to do abdominal surgery without the preparation for it. No man should perform laparotomy until he had acquired a correct knowledge of the symptomatology, diagnosis, and pathology of all the diseases of the pelvic and abdominal cavities, and acquired a knowledge of the technique of the operation. To open a woman's abdomen was a simple operation; but it was important to know when to open it and when not to open it; to know how to deal with the pathological conditions one might encounter. He doubted whether there was one case in a hundred of removal of healthy ovaries or tubes that was a justifiable operation. The removal of healthy ovaries or tubes to cure epilepsy or vague nervous diseases not referable to irritation of the pelvic organs was not more consistent than the castration of a man for similar purposes; but who would have

the hardihood to do the latter under such conditions? The statistics of these operations were faulty. The successful operations were usually reported too soon to judge of a permanent improvement; the patient might improve for a while, but then relapse into a worse condition than existed before the operation. It was well known to surgeons that many persons felt temporarily improved from the mental shock or impression of a surgical operation. These reports were not valuable except in cases where the condition of the patient had been carefully noted for several years after the operation, and all the facts honestly related. Dr. Robert Battey, in a report to the American Gynecological Society, in September, 1887, of fifty-four cases of "Battey's Operation" which ended in recovery, had shown conclusively the worthless character of reports made just subsequent to the operation; in very few cases were there immediate positive changes, and the majority of patients passed through various climacteric disturbances, and the abnormal symptoms did not disappear until from one to five years. In the reports of the late Professor Schroeder, of Berlin, it appeared that some of the patients who had at first apparently been benefited soon retrograded into a condition as bad as or worse than existed before the operation. Hegar had not met with that success that his early experience had indicated. But this surgical craze was not confined to cutting out the ovaries and tubes, but extended to abdominal or vaginal hysterectomy for uterine tumors or malignant disease of the uterus. These operations were the most heroic and dangerous in surgery, and should never be performed until other less dangerous means of treatment had been exhausted, and one was satisfied that the removal of the uterus and its appendages would give the woman the best chances of recovery. The speaker did not believe that hysterectomy for carcinoma or sarcoma of the uterus was often a justifiable operation, and certainly it was not if there was any involvement of the peritonæum or pelvic tissues or a discernible infection of the system. His friend, Professor August Martin, of Berlin, was probably the best authority on the success of this operation; and, while some of his results were apparently encouraging, the majority were not so. Dr. A. Reeves Jackson, of Chicago, had written a great deal to show that hysterectomy for cancer had destroyed many years of valuable life. Better results had followed hysterectomy for fibromata of the uterus; and, if the patient recovered from the immediate effects of the operation, she was usually much improved or entirely cured. Dr. Keith, as an authority in this operation, had no superior, and probably no equal, and, while he had formerly operated often, he seldom did so now, and maintained that no one was justified in performing hysterectomy for fibromata until he had exhausted other valuable means of treatment, and especially carefully used electrolysis after the manner of Apostoli. The speaker did not wish it to be inferred that he was opposed to abdominal section in properly selected cases, for in ovarian tumors and in diseases of the pelvic organs attended by detectable alteration in structure, which positively destroyed comfort, health, or life, and resisted all other means of treatment, laparotomy was imperative. He wished to inveigh earnestly against abdominal surgery as a fashionable craze; measured by the results in the hands of the learned and experienced gynecologist, it was the grandest success of modern surgery, but, when practiced by an ignorant, ambitious doctor, ever ready to risk the life of his patient that he might record another laparotomy, it was positively criminal. It was a great misfortune that many young men in the nursery of the medical profession, without special training, had a semi-insane desire to cut open the abdomen without a precise diagnosis, and before the merits of a more exact course of treatment had been tested. They wanted to begin where the great masters had left off, and

assumed to be Keiths, Bantocks, Schroeders, Martins, or Taits. But this craze was only another instance of the peculiarity of the human mind; the pendulum had gone too far, but finally it would return to its proper place, and matters would correct themselves—the bad would be excluded and the good retained. This was the history of the world: the theory of yesterday became the superstition of to-day, and the orthodoxy of to-day the heterodoxy of to-morrow. And sometimes the pendulum in its return went too far in the opposite direction, and some valuable discoveries were lost, to be discovered again by another generation. We learned from the papyrus of Ebers that the Egyptian surgeons performed iridectomies in the time of Ramses II, and then the custom fell into desuetude, to be revived several thousand years afterward.

Rectal Surgery.—A report on this subject was read by Dr. JOSEPH M. MATHEWS, of Louisville. Last year, in his report to the society, he had stated that he did not believe that antiseptic surgery could be practiced in operating upon the rectum. Since that time he had given the subject proper attention, and the statement then made was to be modified now. His habit was, before doing any surgery upon the rectum, to have the patient take an aperient for several days prior thereto, and upon the morning of the day for operating wash out the bowel with very hot water. Then, at his visit, he used an instrument, which could be attached to a Davidson syringe, the purpose of which was to allow of the return flow of water. Through this he injected as much as half a gallon of carbolic water. He then took a sponge, which had been rendered thoroughly aseptic, and pushed it up into the rectum, say about three inches, after the manner of Gerster. The operation was then done, and the wounds, if there were any, were dressed after the antiseptic fashion. Since he had adopted these precautions he had had far better results. However, the antiseptic treatment was more applicable to operations done for fistula, especially where it was desirable to get union by first intention. Of this he would speak directly.

Hæmorrhoids.—It was the fact that more attention had been given by the profession to this subject in the last decade than ever before. Like all other subjects, it was sometimes overdone. He was glad to say that, in so far as the carbolic-acid treatment of piles was concerned, it was nearly obsolete with the regular profession. Many of the charlatans still used it. Ten years ago he had made a report to the society, in which he predicted that this plan of treating piles would be short-lived. At the same time he had pointed out what he conceived to be the dangers that might attend this treatment, all of which had been verified. Andrews, in his excellent little work on diseases of the rectum, had taken pains to collect statistics, which showed a number of deaths following this plan of treatment. In the last few years excision of internal piles had received favorable mention by a number of authorities. In the hands of an expert, the speaker quite agreed, it was a suitable operation, but in the hands of men not accustomed to doing these operations he saw great danger in it. He had had his assistants at the City Hospital do it before the classes, but in each instance it had been followed by great hæmorrhage. It would never come into favor with the general practitioner.

Fistula in Ano.—There was something new in the way of operating for this affection. It had been suggested that many of these cases could be cured, under the antiseptic treatment, by procuring union by first intention. The author saw many things in the way of this, yet he believed that in selected cases it could be accomplished. After a thorough trial of the method he had concluded: 1. That where a single sinus existed, which did not communicate with the gut, union by first intention could be obtained by making a clean cut and drawing the parts

into perfect apposition. 2. That this manner of treatment was advisable, even if the sinus communicated with the gut, but the results would not be so favorable. 3. That this plan should not be followed if additional sinuses exist.

Nervous Rectum.—Professor Goodell had read a paper on this subject at the last meeting of the American Medical Association, and the author had been reminded by his friend, Professor Anderson, that he (the author) had read a paper a number of years ago upon the same subject, giving cases having the same line of symptoms as those reported by Dr. Goodell. Under this caption he would include neuralgia of the rectum, for whenever there was an exposure of a nerve the consequent irritation excited to neuralgia, and this to the so-called nervous rectum. It was a question whether or not there was always a lesion in these cases. Believing that there was, he invariably stretched the sphincter-ani muscle, and with perfect success. In this connection he wished to call attention to some cases which he had watched with much interest. For want of a better term, he would name the affection rheumatism of the sphincter muscle. He had noticed that some patients suffering from the rheumatic diathesis complained of an intense aching of the anus. Examination revealed nothing. After the rheumatism was subdued, the anal pain subsided.

Dr. J. G. CARPENTER had taken great interest in the report. There was one point that he wished to call special attention to—viz., that of stretching the sphincter for the irritable condition of that muscle that sometimes existed. He had had a striking exhibition of its curative effects in his own person. He had suffered the greatest torture occasionally for years, all of which had been cured by simple divulsion, as recommended by Dr. Mathews.

Dr. W. B. RODMAN thought that the method of treatment of internal piles depended upon the kind of pile one was dealing with. Kelsey had made the best division when he spoke of the kind of pile that he injected with carbolic acid: 1. A pile that had a pedicle. 2. The pile having a broad base. 3. The bleeding pile. It was in the first class that he injected the acid. The speaker had used the injection many times in selected cases, and must say that it had seemed to prove of much benefit.

Dr. D. W. YANDELL said that it seemed to him that Dr. Mathews had made too strong an assertion when he said that the carbolic-acid injection of piles was nearly obsolete in the profession. He had used it in cases where he had been satisfied that it did much good. As to the pain which was referred to it, it depended very much upon how the injection was used. The classification as given by Dr. Rodman he agreed to, and thought that in such cases as he had mentioned the injection could be used with benefit. The manner of treatment certainly depended upon the kind of pile one was dealing with. Sometimes the injection was best, sometimes the ligature, and sometimes the clamp and cautery, as suggested by Mr. Smith, of London.

Dr. MATHEWS said the gentlemen who had spoken, save Dr. Carpenter, had agreed in saying that a pile with a pedicle should be injected, and had taken Dr. Kelsey as authority. He desired to say that this description of pile was to him entirely new. In all his experience he had never seen a pile with a pedicle. Ergo, if Dr. Kelsey only injected piles that had pedicles, he injected no piles at all. The speaker could say, beyond fear of contradiction, that there never was an internal pile that had a pedicle. In a paper read before the society in 1887 he had taken the position that this injection plan was a dangerous procedure, and had given as his reasons the following: 1. The danger of death from embolism. 2. Hæmorrhage from sloughing. 3. Dangerous hæmorrhage. 4. Peritonitis. 5. Ulceration and

stricture as a result. All these predictions had been verified by the table of statistics as given by Dr. Andrews in his work.

Dr. YANDELL would like to ask Dr. Mathews if he did not also observe a slough when he ligated piles.

Dr. MATHEWS would say that there was a vast deal of difference between the sloughing of a pile proper which had a ligature around it and the sloughing of cellular tissue caused by the injection of an acid.

Progress in Ophthalmology was the subject of a report by Dr. J. M. RAY, of Louisville. A knowledge of eye diseases, he said, was slowly marching toward the attainment of perfection. Innovations were not so numerous as in the earlier infancy of the science; but we were more firmly grounding ourselves in what had already been brought to our notice. Close study by careful clinical workers, conjoined with the researches of diligent pathologists and microscopists, was daily adding valuable observations to the science. Of the well-established procedures, the operation for cataract demanded consideration. Von Graefe had taught that the linear incision, combined with iridectomy, was the most desirable operation. Previous to his teachings, the method of Daviel had been in vogue. This operation consisted in a large incision in the corneal margin, with extrusion of the lens, without removal of the iris. Its principal danger, however, was the large incision required, which led to suppuration of the cornea, and the iris often prolapsed into the wound. If this danger could be eliminated, the operation would again come into use. The operation of Daviel was being extensively used by Galezowski, De Wecker, and Panas, and their results presented strong evidence in favor of its adoption. In conclusion, he agreed with Landolt, who much preferred the operation of iridectomy; and believed it was better to seek for a fair amount of useful vision than for a symmetrical pupil. The after-treatment of cataract, he said, was now under consideration. It had formerly been the custom to keep both eyes bandaged and the patient in a darkened room for six or seven days. Recently many had advocated the admission of light and the use of bandages for only a few days. Chisolm had gone so far as to use only a piece of isinglass plaster, and placed no restriction over his patients. The speaker had recently performed cataract operations, bandaged only one eye, and sent the patient home, and no bad result had followed. He said that much of the brilliant work recently done in ophthalmic surgery was due to the employment of strict antisepsis. Weeks maintained that the most valuable of antiseptics were bichloride of mercury and nitrate of silver. He said that the question of contagious eye diseases was one that confronted every practitioner. It had recently been brought to the attention of the Legislature of the State of New York, and measures had been taken to prevent the spread of such diseases in the various public institutions of that State. He had recently combated an outbreak in a charitable institution of his city. Out of forty-three inmates, twenty-three had diseases of the conjunctiva in different degrees of severity. He added that it was clearly the duty of those entrusted with the care of such institutions to keep strict watch and ward against the entrance of contagious eye disease, which, when established, was difficult of treatment and might result in serious impairment of vision. He spoke of recent attempts to cure opacities in the cornea by surgical methods which had long ago been declared physiological impossibilities. Von Hippel, however, had recently addressed himself to the question, and his efforts had aroused much hope. Dr. Fox, of Philadelphia, had reported a successful case following the method of von Hippel. Others had tried the same operation; but, as yet, sufficient time had not been given to demonstrate its permanent effect. He spoke of new drugs, calling attention to erythrophloeine hydrochloride, the local anæsthetic. He called attention to the

value of the use of myotics in the relief of increased intra-ocular tension, and quoted Meyer as saying that regular instillations of pilocarpine had a decided influence on glaucomatous tension. He next called attention to the relationship between diseases of the eye and those of other organs of the body, especially menstrual diseases and changes in the cerebral centers. He asserted that, while the ophthalmoscope gave valuable aid in the diagnosis of many cerebral diseases, it should not be used as an encephaloscope. Attention was directed to the relationship between errors of refraction in the eye, especially astigmatism, and many functional nervous disturbances. The successful oculist must not rely too much on local medication, neglecting constitutional conditions, which often influenced ocular states.

Dr. DUDLEY S. REYNOLDS, of Louisville, said that the report seemed to have covered all the ground in which real advances had been made. He wished to call attention to the fact, however—and he took it for granted that no one would dispute that it was a fact—that suppuration of the cornea was never due to the extent of any incision into its substance. He objected to that part of the report relating to the incision for cataract, because it suggested the idea that suppurations might arise without bacterial infection. He felt that it was necessary in the interest of the general practitioner—he had almost said the country practitioner, who compounded his own medicines or was dependent upon some person living in a town which was too small to come within the provisions of the pharmacy law—to say that the statement that one used one part of bichloride of mercury to five parts of water was very indefinite. How was it to be determined—by the weight of the bichloride crystals and by the weight of the water? As generally happened, he supposed a grain of the salt was made to represent a minim of the fluid. Another method of measuring the fluid was upon the hypothesis that so many drops represented the equivalent of so many grains. Until there was a more uniform method of determining the actual amount, we could not know what was meant by one part of solid to so many parts of fluid. In his own practice he used one grain of the bichloride in twelve ounces of distilled water. In reference to trachoma, he was unable to determine whether or not Dr. Ray would lead us to believe that the chronic suppurative form of conjunctivitis brought on the trachoma or meant that trachoma was due to the epidemic conjunctivitis; but he would like to say that a great deal of confusion had grown out of the use of such terms as trachoma and granular lids, which was unfortunate. The word trachoma was not restricted in its meaning. As Sir Jeffrey Marston, of Her Majesty's Army, had ascertained, the light-colored, shining bodies on the conjunctival surface in the retrotarsal folds, as well as the ocular conjunctiva itself, resembling rice grains or sago grains, were the local manifestation of constitutional infection. The malarial infection, as Sir Jeffrey Marston had stated, was often shown first by the presence of trachoma conjunctivitis. The hypertrophied papillæ of the palpebral and retrotarsal portions of the conjunctiva which followed purulent conjunctivitis were in no sense akin to trachoma. The speaker had had some striking experiences himself, extending over twenty years, in one of the largest orphan asylums in Kentucky. Part of that time his friend, Dr. Coomes, had had opportunities of examining cases in the same institution. In the month of April there were one morning two cases of purulent conjunctivitis; in the next forty-eight hours nineteen more cases occurred. Those children were separated from all the other children in the house; they were put into separate dormitories, and had access to separate playgrounds; they were kept restricted with regard to their liberties until there was a cessation of all morbid phenomena. Since that time not a single case had occurred. Bichloride of mercury and borate of sodium had constituted the principal medica-

ments. There was no relation existing between constitutional disease and contagious diseases of the eye. Even von Hippel's operation of transplanting the cornea of the rabbit, in Dr. Fox's case, mentioned by Dr. Ray, was not the latest. By far the most brilliant result had been reported by Dr. Chisolm, of Baltimore. It was in a recent case, and it was very much more encouraging than that of Dr. Fox. As to erythrophlœine bringing on glaucoma, it was, as Dr. — found out, a pretty difficult statement to maintain. It was difficult to say that glaucoma might be made to attack persons who had not had it before. It had appeared in persons whose nervous system had been subjected to great tension, loss of sleep, mental anxiety, straining of the eyes, or long-continued exposure to glaring light, and it might come on without any particularly marked symptoms. The use of pilocarpine by Meyer, of Paris, had been alluded to. The speaker regretted that it had; it misled the profession. Meyer was a conscientious man, but he had heard him exalt pilocarpine for no other reason than that his chief rival in the practice, Sichel, used eserine instead of performing iridectomy; but he did not agree with Galezowski, who excised the retrotarsal portion of the conjunctiva by seizing and pulling it forward and snipping it out with the scissors, a serious operation, notwithstanding it forever restricted the movements of the eyes. He took it for granted that glaucoma could not be relieved by eserine, pilocarpine, or anything else but von Graefe's iridectomy; and for the very excellent reason that it allowed the cut vessels to be emptied into the aqueous chambers, where solution and ultimate absorption might take place. The operation of puncturing the sclera had proved unavailing. In all these cases the disease had returned. There were two eye affections—glaucoma and cataract—which nobody but the specialist should undertake to manage, because in glaucoma there were necessarily so many details in diagnosis that the general practitioner, unarmed with the instruments of the ophthalmic surgeon and unaccustomed to the use of these instruments, could never undertake to reach by any possible means. In the extraction of cataract the success of the operation was dependent upon more important things than the particular form of the operation—an educated sense of touch, a thorough mastery of instrumentation, etc.

As to the muscular deficiencies of the eye, the speaker thought that Dr. Stevens, of New York, had done the greatest possible service in his work on the "Relation of Ocular Diseases to the General System, and especially the Reflexes from the Genito-urinary Organs." The relations of the genito-urinary organs and the eye are well known in many forms of disease. To illustrate the subject more pointedly, he would state the case of a boy, twelve years of age, of good family, and apparently well nourished, who would make spasmodic movements about the eyelids, and would snuff and move his head from side to side. He had a very slight error of refraction in the eye, H. amounting to $\frac{1}{16}$. He had, however, a constantly annoying double vision on any attempt at reading or going out into the strong sunlight. In cloudy weather he was comfortable; when the sun came out, he saw double. A critical inspection showed that his eyes squinted outward. The use of prisms developed no muscular deficiency. The speaker had been a little troubled to determine the nature of his diplopia. He looked at the way he stood, and watched his way of walking, and noticed that he turned his toes in. He found that he had phimosis. He sent him to his family physician in Louisville, who circumcised him. He now no longer saw double, and would not allow his small degree of hypermetropia to be corrected.

Progress in Obstetrics was the subject of an address by Dr. J. W. IRWIN, of Louisville. It was brief and confined chiefly to the more important subjects that had attracted attention

during the year. The old and the new methods of performing the Cæsarean operation were compared, showing the more encouraging statistics following the latter. Remarks on puerperal eclampsia, on the uses of electricity in obstetrical practice, on the causes of lacerations of the perinæum, and on post-partum antiseptics were presented. The essayist said that anal ulcers, fissures, and fistulæ and hæmorrhoids were strong predisposing causes of laceration of the perinæum. Such troubles, he said, brought about tonic contraction of all the muscles of the outlet of the pelvis, causing, during labor, greater resistance to the descent of the foetal head, and rupture of the perinæum was the inevitable result. He then reviewed the recent methods of post-partum antiseptics, and spoke of the rules laid down by Playfair for the governance of monthly nurses in the management of cases of confinement, in which that author advised that "the vagina of the puerpera should be washed out daily with an antiseptic solution," and concluded his remarks by saying that, when the entire field of antiseptics in obstetrical practice was viewed in the light of reason, one could not help believing that the numerous methods which had been suggested from time to time for the destruction of germs in the lying-in woman should be supplanted by cleanliness by means of pure water.

Genito-urinary Diseases was the subject of a paper by Dr. E. R. PALMER, of Louisville, in the course of which he referred to the use of iodoform; to that of mercury, hypodermically and by inunction; and to heredity.

The Surgical Treatment of the Urinary Bladder and Urethra was the title of a paper read by Dr. ARCHIBALD DIXON, of Henderson, as a part of the discussion of Dr. Palmer's paper.

Dr. W. E. RODMAN, of Hodgenville, said that it was simply with reference to his experience in gonorrhœa as a cause of sterility that he wished to speak. He remembered that several years before he had treated a case of gonorrhœa in a lady—contracted from her husband—and afterward had delivered the woman of three children; and he remembered another case where he treated the husband for gonorrhœa, and also the wife, pregnant at the time, and afterward she conceived and had another child.

Dr. PALMER said that Dr. Dixon had spoken of urethral injection, and credited it to George Brewer. John O'Reilly had published in the "Practitioner," in 1874, a long paper in which he asked attention to that treatment, which antedated Dr. Brewer by at least ten years. They called that "Brewer's method," just as they now called it "carbolyzed treatment," just as they called it "Levick's treatment." In regard to the abortive treatment of syphilis, the speaker thought it was generally recognized that syphilis was not the dire disease that it had been formerly. He remembered that when he was a young man he had remarked that he had a great deal rather have syphilis than stricture. It could be cured in a comparatively limited time, and abortive syphilis was an every-day occurrence in common practice. Dr. Johnston had said that the gynecologists here had seen uterine obliquities. He had seen sterility in women which he had no doubt was dependent upon the fact that the right broad ligament was so contracted as to throw the os on the left side of the vagina. These obliquities were not the ordinary flexions and versions, but the pulling of the womb on the top, to one side, and throwing the cervix out of the axis, accounting for the sterilities attributable to gonorrhœa. With regard to Cox's operation, the more he saw of it the less he liked to do it. He had rather do a cystotomy than go prowling around without a guide. A man was almost foolhardy to attempt to open into the bladder without a guide.

Improvements in Nasal Surgery.—Dr. M. F. COOMES, of Louisville, reported on this subject substantially as follows:

The most important improvements in nasal surgery had occurred within the last ten years. Until recently operative procedures for correcting abnormalities resulting from deviations of the septum had consisted in the removal of a portion of the most prominent part of the offending structure. This was usually accomplished by the use of a chisel or a sharp knife. Where there was a circumscribed prominence decidedly conical in shape, the chisel was probably the most convenient instrument for its removal. There was a little skill necessary in the use of the chisel—viz., to know how to regulate the amount of force used. It was always best to dissect up the overlying structures before attempting to remove bone or cartilage. By doing this, the annoyance from hæmorrhage is avoided, and the operation could be done much more successfully and satisfactorily. Where there was stenosis, the result of a bony or cartilaginous growth, the Morrison, or dental, engine, as it was called, was one of the most valuable means for relief. With suitable drills, it had the advantage of being applied just where it was needed without injuring or interfering with other structures, and its application was painless. It enabled the operator to do just what he desired without doing any more. Trephines, which were now a part of the surgical paraphernalia, were most conveniently used with the engine for the removal of certain osseous or cartilaginous growths found in the nose. While it had been more than ten years since the introduction of the galvano-cautery for the purpose of removing growths from the nose, its perfection had not been attained until recently. While the galvano-cautery was an instrument of incalculable value to the rhinologist, the speaker knew of no instrument which was calculated to do such an amount of injury by its improper use. The fact of its use being unattended by hæmorrhage made the patient much more willing to submit to its application, thus enabling designing persons (and they existed in the medical profession) to take advantage of unsuspecting people who fell into their hands. He believed that he could say without appearing egotistical that he observed as many persons afflicted with diseased noses as any man in the Southwest, and he was free to say that he rarely found it necessary to use the galvano-cautery. As to its curing hay-fever, it was a myth, and the man who had done most to urge the public to believe that destruction of the so-called sensitive area in the nose by the use of the galvano-cautery would cure hay-fever now admitted that he had been too sanguine, and that it was a failure. Failure to cure would not be so bad if it left the nose in as good condition as before its application; but it often happened that destruction of large areas of mucous membrane in the nose resulted in cicatrices which were without any of the functions of a mucous membrane, and the result was that the secretions became dry and accumulated in the nose and created such an unpleasant odor as to call for the patient's constant care in order that he might not become a nuisance to his associates.

The introduction of the use of artificial light as an aid in this branch of surgery had rendered it much less difficult, and enabled us to accomplish many things which, under ordinary circumstances would be unattainable. It was but a few years since our outfit for nasal surgery had consisted of a Gross's polypus forceps and a snare. Now we had a variety of snares, the most valuable among them being Jarvis's and Wright's. The latter had a ratchet-like movement for tightening the wire. This was moved by a trigger similar to that of an ordinary pistol, which enabled the operator to control his patient and do his work much more satisfactorily. The author claimed the credit of having devised a number of instruments for the removal of tumors from the nasal cavities, the most important of which were a pair of scissors and a forceps. The allegation made for both instruments was the greatest amount of strength in the

smallest amount of space. Either of these instruments could be used through a large ear speculum. This hook and cutting-fork had been devised by him some five years before. He considered the hook one of the most valuable instruments that he had, both for the removal of tumors and as a diagnostic instrument. Here was a cutting snare which he had recently had constructed. Its mechanism spoke for itself, and with its compactness showed at once that it was a valuable adjunct to the nasal armamentarium.

Insanity and Life Insurance was the title of a paper by Dr. B. W. STONE, of Hopkinsville, who cited the case of a man who had become melancholy, abandoned his business, and sought a life policy, which he finally obtained, and then on the next day committed suicide.

Dr. F. H. CLARKE, of Lexington, said that there was hardly a medical school which sent out graduates that did not teach them in regard to cases such as they would not see in years of practice. No man practiced any length of time without being called upon to see an insane person, either in court or privately. There was no case that he knew of in the practice of medicine more difficult of diagnosis than one of diseased mind; it baffled the most careful observer. He did not believe that there was any well-marked line—theoretically—between a healthy body and a diseased body. Fortunately, however, there was a standard of health, and it was known when a person was sound or unsound. In the cases of persons sent to an asylum, the classification of the diseases was often embarrassing. He did not know of a more important field than that of insanity. The reason was that in his State, as soon as a man got insane, he was sent to the hospital. He could be as well treated elsewhere as in the hospital. He would be injured by being sent to an asylum for the insane. He believed that a man who was insane or becoming insane should be made provision for. He hoped that medical jurisprudence would become the subject of a special chair in all the medical colleges.

Dr. L. S. McMURTRY, of Danville, was elected president for the ensuing year. The next meeting will be held in Richmond, beginning on the second Wednesday in May, 1889.

ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

Fourth Meeting.

The President, Dr. W. H. BAKER, of Boston, in the Chair.

Septic Peritonitis following Laparotomy.—Dr. P. F. CHAMBERS, of New York, read a paper with this title (see vol. xlvii, page 173).

Dr. PORTER, of Providence, had had no deaths from septic peritonitis following laparotomy, but he had had several due to other causes. In his early laparotomies he had had a good many cases of mural abscesses. Fortunately they had all broken externally, and septic peritonitis had thereby been avoided. Since he had paid greater attention to the antiseptic treatment of the parietal wound no mural abscess had formed. When the patient was troubled with vomiting and it was desirable to give a cathartic, he administered calomel in grain doses until the desired effect was produced. The movement of the bowels often resulted in cessation of vomiting and relief of tympanites. Should he have a case of septic peritonitis he would adopt the course recommended by the author.

Dr. JAMES B. HUNTER, of New York, agreed with Dr. Chambers in nearly all respects. He had washed out the peritoneal cavity in peritonitis several times, in three instances after the peritonitis had been fully developed. He thought it better to wash out the cavity thoroughly, and not to sponge it after-

ward. He did not add any antiseptic to the water—not that he disbelieved in antiseptics, but because here he considered them out of place; they were dangerous when employed of sufficient strength to be of value. The peritonæum healed quickly after the operation. Unless there was carelessness, mural abscesses would never cause death. Vomiting was not usually the first symptom of septic peritonitis. When the disease had reached the stage of abdominal distension and vomiting the case was almost hopeless. One other point had been touched upon which he regarded as of great importance—namely, the non-use of opium or morphine. In his last twenty-four cases of laparotomy he had not used morphine in a single one, and peritonitis had not developed in any of them. He believed that by the abundant administration of morphine, paralyzing the intestinal coats, tympanites was developed, which caused much of the pain and distress accompanying peritonitis. With good nursing it was better not to give an anodyne, but if the patient was restless, and it was impossible to control vomiting, an anodyne might be given. Dr. Bantock had informed him that in sixty cases of hysterectomy he had not given opium or morphine in a single one. The speaker judged of the temperature of the water by the hand; it ranged between 100° and 105° F. Large quantities were employed until it came away clear.

Dr. GEORGE T. HARRISON, of New York, was in accord with Dr. Chambers in most of his statements, but he agreed with Dr. Hunter regarding sponging. The important thing was that the operation should be perfectly aseptic. He did not think there was any danger in leaving a limited amount of material like blood in the peritoneal cavity provided no septic matter had been introduced. When mural abscesses developed it showed that antiseptic precautions had not been thorough. He had known of death resulting from the bursting of a mural abscess into the abdominal cavity; of one case, at least. Therefore he thought it important to first bring the surfaces of the peritonæum together with a catgut suture.

Dr. JOHN G. PERRY, of New York, had watched with a great deal of interest what other surgeons were doing, and among other things which had impressed him was the difference of opinion existing among them on apparently important subjects. Various points had been brought out as having more or less bearing upon the success of the case, but there was one which seemed to be very generally overlooked—namely, the vitality of the patient. Certainly in publications one failed to find much stress laid upon the question of the nutritive powers of the patient. The human system could not be handled as one would handle a machine, tearing down its various parts and putting them together again at pleasure. The spinal cord and the chylipoietic system should be examined very carefully before an operation. When this was done, he thought, new light would be thrown upon the cause of death in many cases.

Dr. HUNTER thought the note referred to by Dr. Perry had been struck a good many times. He had himself dwelt upon it a number of times. About a year before he had read a paper in which he laid stress upon the importance of careful examination of the stomach, kidneys, heart, lungs, and other organs.

Dr. PERRY was still disposed to think that examinations were limited too much to that of the urine only for albumin or albumin and casts, and that too little attention had been paid to the nutrition of the body.

Dr. WILLIAM M. POLK, of New York, deeply regretted not having heard Dr. Chambers's paper, as it treated of a subject of great interest to all operators. Dr. Perry had touched upon a point of great moment—namely, what the kidneys were doing, as indicated not alone by the presence or absence of albumin and casts, but in excreting effete material. He had had

certain experience in consequence of neglect of the urinary secretion which had led him always to examine that fluid with reference to its quantity and the amount of its solid elements as well as with reference to casts and albumin. He attached so much importance to this subject that a few days before, when Dr. Lusk had a case of Cæsarean section in which septic symptoms of different kinds developed, he had asked the house surgeon how much urine the patient was passing, and when he replied thirty-five ounces in twenty-four hours, had predicted that she would get well, which she had done. Whenever he found the kidneys doing their work well, no matter how seriously ill the patient might be, it was a banner of hope to which he clung with more pertinacity than to any other one thing. We should examine patients as carefully as was demanded in the papers of life-insurance companies. In spite of the exceedingly good results obtained in laparotomies, there was one thing which might well frighten any one. Hæmorrhages could be taken care of fairly well, but even a pin-head quantity of dirt might kill the patient. When he began to operate in Bellevue Hospital, and before students, he did it with fear and trembling, but the results had proved good, and he had therefore come to the conclusion that many of the conditions which before had been held to cause sepsis should be thrown out of consideration. Since Mr. Tait's visit to New York he had come to believe that nine tenths of the deaths from septic peritonitis were due to meddling with the peritonæum. Mr. Tait's deaths occurred among his first cases, and Dr. Polk thought he struck the key-note of the situation when he said that those deaths were due to bothering around inside the pelvis a long time to secure bleeding vessels; whereas in subsequent cases he threw a ligature around the broad ligament, tied it, cut short the operation, and spared the abdominal cavity prolonged manipulation in seeking to control all bleeding points. The speaker thought that not much attention need be paid to points of oozing, but the question of drainage was one of most importance. When there was oozing he infinitely preferred to get such material out of the abdominal cavity by means of a drainage-tube. He preferred Tait's method, consisting in emptying the drainage-tube just after the operation every half-hour. In that manner any considerable accumulation of fluid would be avoided. At the end of twenty-four or thirty-six hours one had to do only with fluids immediately in contact with the tube. In this way encysting of fluids in the peritoneal cavity would be avoided. Regarding the method of cleansing the abdominal cavity, it was generally agreed, or should be, that hot water was by far the best agent to employ; it gave much better results than any other which had been tried. It was pretty well established that antiseptics used with the water were unnecessary. It was better to have the water too warm than not warm enough, therefore it was better to have it of a temperature between 105° and 110° than between 100° and 105° F. The influence of heat on the shock was beneficial. The best way to get the fluid out of the peritoneal cavity was by means of a siphon. It should not be sponged out. The point had also been brought out by Mr. Tait that one should put as few sponges into the peritoneal cavity as possible. If the operator was in any doubt as to the necessity for the use of hot water to cleanse the cavity, no matter how slight the indication might be, the water should be used. The speaker had never seen it do any harm when employed as he had indicated, but he had seen harm come from failure to use it. The use of opium was bad. If the woman was delirious and could not be kept quiet, it might be required, but he would not employ it except as a last resort. More harm than good had been done by opium. The pain which patients suffered was often largely hysterical, and was not so excessive as it might seem to be. It was an after-effect of ether. As to movement of the bowels, he thought

we stood on firm ground in that regard; catharsis was indicated. The agent employed was of little importance, but a free discharge should be secured. His preference was for gray powder and bicarbonate of sodium, ten grains each, followed in four hours by a Seidlitz powder. If there was tympanites which did not subside readily, he repeated the cathartic in about seven hours. He preferred this to an enema. He thought the patient would feel more comfortable after catharsis, but it was wrong to suppose that catharsis would cure peritonitis. It had been the custom twenty years ago at Prague to purge patients with puerperal peritonitis indefinitely, but they did not get well; they died. Death resulted from want of drainage. It was that fact which led to the reaction against catharsis and to the adoption of the opium treatment in peritonitis. We now employed drainage and catharsis. As to the question of reopening the peritonæum to discover septic matter, it was difficult for the gynecologist to avoid the hope that the apparently grave symptoms were not due to some trifling condition, and that they would soon pass away. But his judgment, based on experience, led him to open the cavity and cleanse it thoroughly. He had done this again and again, and had never had occasion to regret it. But it was not well to do so in an extreme condition, in a state of collapse. It was better then to give opium and use an enema. But if the case was seen early, and one was convinced that there was a sharp attack of peritonitis, no harm would result from opening the peritonæum and irrigating thoroughly. Regarding the signs of peritonitis, it might be easy enough to say that the patient had peritonitis which would go on and prove fatal, but how could one affirm it? The speaker relied more upon the pulse than upon any other sign. A woman suffering from peritonitis might die without having a temperature above 101.5°F ., but the action of the heart, showing how severely her vitality was being taxed, and the pinched countenance, showing the effect upon the nervous system, were signs of the greatest significance. Tympanites might be absent. He had seen patients die of septic peritonitis so late as the fifth day, and yet without any tympanites being developed. He paid less attention to the temperature than to anything else. In fact, he did not mind a good frank advance in the temperature on the third or fourth day after the operation. He would rather see it than to see a considerable advance in the pulse-rate independent of increase of temperature. Increase of temperature might be due to an ordinary inflammatory reaction, whereas an increase in the pulse-rate without increase of temperature indicated heart-failure. As to sewing up the abdominal wound, his predilection had been in favor of first closing the peritonæum, following in that regard the example of Martin, of Berlin. But the more he had thought of the matter the less did he consider this precaution necessary, save in certain cases, such as those of hysterectomy in which the stump was treated outside the cavity of the abdomen. In ordinary cases he believed it involved loss of time and was unnecessary. If a needle were used which would not cause much laceration, and the peritonæum, fascia, and skin were brought into proper relation, there would not be much danger of trouble from abscess. He described the method which he had recently been led to employ in suprapubic amputation of the uterus. It consisted in enucleating the mass, after the manner instituted by Bantock, cauterizing the stump, and stitching it to the abdominal parietes. The procedure was analogous to that suggested by Minor in the enucleation of parovarian cysts, and there was just as little danger of decomposing material entering the peritoneal cavity. By this method also one avoided the use of pins, which were a source of great annoyance in other methods of suprapubic amputation of the uterus.

Dr. ANDREW F. CURRIER would emphasize the objections to the use of opium, and indorse the employment of cathartics

and the remarks made regarding a thorough examination of all the organs before the operation, particularly of the liver and kidneys. A case of extirpation of the uterus through the vagina, about a year ago, had impressed him with the necessity of a careful examination of the kidneys and liver. We could by ordinary analysis say whether the urine contained casts or albumin, yet it was difficult to say whether the patient had not a predisposition to acute nephritis, which in his opinion was the cause, rather than peritonitis, of many deaths after laparotomy. In the case of hysterectomy referred to, he believed the primary cause of death lay in the liver, and the cirrhosis present could not have been foretold. The operation was also of long duration. In one case of marked tympanites, causing distress and dyspnoea, soap-suds and turpentine were injected into the rectum, and afterward a large tube was introduced eight or nine inches. Within two hours there was a free evacuation of the bowels, the tympanites disappeared, and the temperature fell two or three degrees during the night. He thought turpentine would sometimes be found a valuable aid to catharsis, etc.

Dr. CHAMBERS used simply hot water in washing out the peritoneal cavity, adding no antiseptics. The water was previously thoroughly boiled. When septicæmia developed he thought it was due to septic material introduced in some way from without. Regarding signs of septicæmia, he had seen death result when the temperature had not risen above 101°F . Vomiting sometimes began when there was scarcely any rise of temperature. The pulse was a more important sign. He made it a custom to keep the drainage-tube well cleansed. After the operation he put some iodoform gauze or other antiseptic material into the tube, through which the fluids would pass by capillary attraction.

Dr. HENRY C. COE, of New York, was inclined to regard with some distrust the diagnosis "septic peritonitis" so frequently assigned as the cause of death after laparotomy, especially in cases where an autopsy had not been obtained. According to modern antiseptic teachings, it was generally assumed that, provided septic influences had been rigidly excluded during the operation, there was no reason why this factor should be active several days after the abdomen had been closed. The causes of death after laparotomy were not yet all fully understood. The speaker had frequently performed autopsies in cases in which death had been ascribed to septic peritonitis, but peritonitis was sometimes absent and sometimes quite limited, while there were no evidences of septicæmia in other organs. How could we decide between septic and non-septic peritonitis from the intensity of the inflammatory process, from the presence of numerous adhesions, or from a quantity of offensive exudation in the cavity? Or, was the diagnosis based on clinical symptoms alone? There were great difficulties in the way. The speaker had formerly believed that the condition of the stump (whether healthy-looking or sloughy) might give a positive clew to the presence of a septic element, because the peritonitis commonly began in the coils of intestine adherent to the stump; but he had found extensive exudative peritonitis with healthy-looking stumps and *vice versa*. Before deciding that the sepsis was the cause of death we must exclude other causes. The speaker intended to give the results of his observations on this point after he had collected more data, but he had now no hesitation in affirming that the true cause of death in these cases was not infrequently overlooked. Even in a series of only fifty autopsies he could recall unsuspected lesions in the thoracic or abdominal viscera which had really led to the fatal termination, instead of the supposed septic peritonitis. Moreover, there was reason to believe that a moderate non-septic peritonitis would kill a patient with a damaged heart or kidneys, where another patient would recover. But in the majority of such fatal cases there was no

autopsy, so that there remained considerable doubt as to the true cause of death.

The purpose of these remarks was not to make light of antiseptic precautions, which should be most rigidly adhered to. The "antiseptic conscience" (as Dr. Howard Kelly had happily put it) was indispensable to every operator who aspired to success. The point urged was that we were not justified in inferring that every low grade of peritonitis developing several days after laparotomy was necessarily of septic origin; furthermore, that, relying upon clinical symptoms alone (without the confirmatory evidence afforded by an autopsy), we might assume that death was due to sepsis when it was really due to prolonged shock, exhaustion, or visceral lesions.

Urethral Caruncle; its *Ætiology* and Progress.—Dr. J. G. PERRY, of New York, read a paper thus entitled (see vol. xlvii, page 234).

Dr. INGALLS, of Hartford, said that his experience with the condition had been only clinical. He was rather surprised to hear that Dr. Perry had seen so few cases, for within the last four years he had operated upon three patients coming from a territory about twenty-five miles in diameter. From his own experience he was disposed to believe that urethral caruncle arose from pressure on the vessels during childbirth. In all of his cases there had been a history of hard labors, and the caruncle had developed from six months to two years later. The tumors, he thought, must be most liberally supplied with nerves and blood-vessels, for in all of his cases there was great sensitiveness, and in one considerable hæmorrhage had taken place before he operated. In two he destroyed the tumor with chromic acid; the other one was so large that he resorted to the actual cautery. There had been no return.

Dr. HOWARD KELLY, of Philadelphia, thought with Dr. Perry that the subject was in a state of confusion; that we were including under one name a number of different diseases. The disease to which the author had particularly referred was, he thought, a hæmorrhoidal condition, which was apt to involve the whole urethral wall, although it might be limited to the meatus. He had operated in a number of such cases, and called them cases of urethral caruncle until recently, when he had seen an example of true urethral caruncle. In the other cases he cut out the hæmorrhoidal veins after Dr. Emmet's method. In some of the cases there was exquisite sensitiveness similar to that in piles. In the case of true urethral caruncle he proposed to bring down the tumor, exsect it, and cauterize the base.

Dr. A. B. TOWNSHEND, of New York, related a case bearing on the *ætiology*, that of a married woman who had not borne children. She had a severe gonorrhœal urethritis, and an anteverted, very heavy uterus. She complained bitterly of a condition which was worse sometimes than others. Examination showed an irritable meatus, and on separating the lips a considerable fold of mucous membrane on the posterior wall came down, presenting an appearance almost like a polypus. It was exquisitely tender and purple in color. He took it off with the snare, without pain, under cocaine.

Dr. DUDLEY said, in reply to a question by Dr. Ingalls, that he had seen urethral caruncle in those who had not borne children. He had seen the condition result from gonorrhœa, directly, he believed, from straining in urination and from irritation. The caruncle had begun in slight rolling out of the mucous membrane. The membrane, having been deprived of its epithelium, was very sensitive. The treatment consisted in tying off the tumor with a ligature. This was less painful than the action of an escharotic, and left no scar to give trouble afterward.

Dr. J. DUNCAN EMMET had had no experience with urethral

caruncle. He had seen so-called cases, in which the tumor, however, had consisted simply of prolapsus of the mucous membrane of the urethra. This, becoming congested and thickened, had the appearance of a neoplasm. Dr. Thomas Addis Emmet taught that true urethral caruncle was one of the rarest diseases.

Dr. HUNTER agreed with Dr. Emmet that many so-called cases of urethral caruncle were cases of prolapsus of the urethra which had been subjected to pressure and become inflamed and irritated, and were excised for neoplasms. He would employ Dr. Emmet's method of treating such cases. True urethral caruncle was very rare.

Dr. COE had examined microscopically two or three specimens of what he regarded as genuine caruncle. He saw no reason for regarding them as different from any other papillomatous growth—for instance, papilloma of the bladder. But the epithelial covering was very thin and often was entirely removed by friction. The nerve-ends being thus exposed explained to him why they were so sensitive.

Dr. KELLY, of Baltimore, had recently seen two cases of a distinct growth in the urethra, one of considerable size, the other one small. The latter was not sensitive. He was unable to say why some should be sensitive and others not.

Dr. PERRY recapitulated some parts of his paper. He regarded the conditions variously called irritable vascular excrescences, caruncles, etc., as not in themselves a disease, but as the product of a cellular inflammation. There might be a urethritis, an inflammation of the mucous membrane alone, but the condition under consideration resulted from inflammation of the deeper cellular tissue. Irritable caruncle, or urethral excrescence, was more common, he believed, than was generally supposed. As to its presence in women who had not borne children, he had such a case under treatment at present. One point he wished to emphasize was the absence of cystitis as a cause of the condition in the case related; nor were there phosphates or urinary sediment. But the urine was of high specific gravity and contained much uric acid. That was an indication for constitutional treatment which he never neglected. The specific gravity of the urine having been reduced, the pain was relieved, but it returned when she disobeyed instructions, and again passed urine of high specific gravity. In this case treatment was begun while there was only superficial urethritis; but had it been neglected the patient would have returned in ten days or two weeks with an irritable urethral caruncle. The deep cellular inflammation could invariably be arrested before the formation of a caruncle, if it was treated in time. The development of the tumor in the direction of the meatus was an anatomical necessity. He had not referred to the nerve-supply, because physiology taught that in new tissue there were vessels and nerves. He had said little about treatment, because literature was full of it, and every physician had his favorite method.

Reports on the Progress of Medicine.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

Œsophagotomy.—Upon a case of successful removal of a foreign body from the upper end of the thoracic portion of the *œsophagus* McArdle bases some remarks on the precautionary measures necessary when perforation of the *œsophagus* has occurred and the important vessels are implicated, and on the after-treatment of these cases ("Dublin Jour. of Med. Sci.," April, 1888).

In the case which he describes he found the sheath of the vessels firmly adherent to the œsophagus, the artery thickened and surrounded by a firm, fibrous exudation for two inches of its length, one half of this being below the upper border of the sternum. At the center of the exudation the foreign body had perforated the œsophagus and was pressing on the carotid artery. To avoid danger from hæmorrhage, provisional ligatures were passed above and below this point before any attempt was made to remove the foreign body. If hæmorrhage should occur in the absence of such provisional ligatures it would be very difficult, if not quite impossible, to seize and tie the vessel, with the blood pouring into the œsophagus and welling up into the wound.

Suturing the œsophageal wound is indicated when the foreign body is removed before it has caused ulceration or suppuration, but is contra-indicated when there are erosions of the œsophageal mucous membrane, abscess about the foreign body, severe inflammation of the walls of the œsophagus, or of the connective tissue between it and the vertebræ, and perforation of the œsophagus by the foreign body. The passage of a strong silk thread through each lip of the œsophageal wound is useful, as they serve as guides in case of the occurrence of hæmorrhage, or of the necessity of intubation. Dressings must not remain on longer than twenty-four hours at first, because of the danger of infection from the œsophagus and because of the tendency of serum, mucus, and pus, if allowed to collect, to pass downward toward the anterior mediastinum and set up additional mischief. The cervical wound must be carefully packed to prevent such accumulation.

The methods of feeding the patient after œsophagotomy are by enemata or by a tube passed through the mouth, the nose, or the œsophageal wound. The use of the tube passed through the nose is preferable whenever practicable, as enemata can not be depended on for over forty-eight hours, and its passage through the mouth is, after the first day, more uncomfortable. To pass the tube through the wound delays the healing, but may sometimes be necessary. The administration of small amounts of iced chicken essence at frequent intervals served admirably in the given case. He notes particularly the readiness with which small pieces of iced foods can be swallowed when liquids give trouble by escaping, for the most part, from the wound.

Frew ("Ann. of Surg.," March, 1888) reports a successful case of œsophagotomy for an irregular broken piece of glass, measuring over an inch across, which had lodged about an inch above the sterno-clavicular articulation. The glass had penetrated the œsophagus and probably caused the excruciating pain the patient suffered when he swallowed or bent his head backward. In the operation he finds the cervical vertebræ, which can be distinctly felt after the superficial tissues are divided, form the best guide to the œsophagus, as the trachea is necessarily drawn to one side. The patient was rendered very anæmic by two attacks of secondary hæmorrhage, but recovered after transfusion of twenty-four ounces of warm water containing seventy-five grains of chloride of sodium, thirty-seven grains and a half of carbonate of sodium, and three grains of phosphate of sodium into the radial vein.

Gastro-enterostomy.—The results of Lücke's operations as reported by Rockwitz ("Deutsche Zeitschrift f. Chir.," "Ctrbl. f. Chir.," No. 1, 1888) are remarkable as compared with those of former operators. Rockwitz has collected reports of twenty-one operations by others, seventeen of which were for carcinoma causing stenosis, and four for cicatricial stricture of the pylorus and duodenum. Of the patients, twelve, or 57.2 per cent., died—eleven directly from the operation, and one four weeks later from marasmus. Lücke's cases number eight, six being carcinomatous, two not. Only one patient died; that one, two weeks after operation from inanition and pneumonia. This success is ascribed largely to the fact that Lücke performs gastro-enterostomy instead of pylorotomy in all cases in which after laparotomy the extent of the disease is found to allow any doubt concerning the possibility of removal. Pylorotomy should not be undertaken when the condition of the parts does not warrant a favorable outlook for a radical cure, when the size of the cancer is great, or when there are secondary deposits in the pancreas, liver, or other parts. A careful selection of cases in this manner will leave very few suitable for pylorotomy.

In all his operations Lücke is very attentive to detail. The bowels

are kept open; an hour before the operation the stomach is washed out and the peristaltic action of the intestine quieted with a rectal injection of opium. Median laparotomy is performed with careful antiseptic precautions. The most dependent portion of the stomach and the most convenient loop of intestine are clamped, an incision is made through the wall of each, and the corresponding edges of the wounds are sutured carefully in apposition so as to leave a gastro-intestinal fistula. The form of suture employed is immaterial, but it must be very carefully applied. A prolonged operation is to be deprecated, as it is better to avoid complicated methods. The stomach and intestine should be so joined that the peristaltic action of each shall be in the same direction. This is determined by Nothnagel's test, the application of a crystal of common salt to the mucous membrane of the intestine causing active peristalsis.

The result is very markedly palliative. The subjective pain and annoyance caused by the retention of food in the stomach disappear, while the rapid convalescence and the almost immediate increase in weight are very noticeable. The non-cancerous cases seem to have been radical cures; the cancerous ones ended in death two weeks, three months, four months, and fourteen months after operation.

Cholecystotomy.—Tait ("Lancet," April 14, 1888) presents an additional series of eleven cases of cholecystotomy, with one death. He is of the opinion that the inflammation tends toward suppuration more when the gall-stone is solitary than when a number are found. Suppurative inflammation makes the gall-bladder very friable, contracted, and adherent to the deep structures, so that the operation is often very difficult. He maintains that where there is an absence of cancerous complications and the age of the patient is such as to give a fair chance, recovery is almost certain, and that the relief obtained amply compensates for the small amount of risk.

Removal of the gall-bladder is impossible in the cases where it is most needed—i. e., in suppurative cholecystitis; stitching the gall-bladder to the intestine he denominates a fanciful operation; hence he does not favor any operation except the simple one of cholecystotomy.

Cholecystenterostomy.—Kappeler ("Ctrbl. f. Chir.," No. 1, 1888) relates the performance by himself of this novel operation. The ductus choledochus was found to be blocked by being involved in a large tumor of the pancreas, and the gall-bladder greatly distended with bile, which was drawn off with a trocar. The margins of this wound were then attached to the margins of a wound made in the nearest loop of small intestine for this purpose, with a double row of sutures in the serosa and one in the mucosa. The symptoms referable to obstruction of the biliary duct soon disappeared. No bad symptoms were noted as resulting from the operation.

Enterectomy and Enterorrhaphy.—Under this title McArdle ("Dub. Jour. of Med. Sci.," January and February, 1888) describes a very troublesome case of fæcal fistula upon which he successfully operated. The patient, a boy sixteen years of age, had a fistula leading into the right iliac fossa from which escaped a large amount of pus and solid particles of food. The trouble dated back fifteen months and was caused by jumping from a cart upon a pavement, when he was seized with severe pain in the right inguinal region. At the operation, the intestines were found matted together and adherent to the pelvic parietes. A number of perforations were present, and a very curious attempt on the part of nature to exclude this portion of the bowel by establishing a communication just above the ileo-cæcal valve with a loop of small intestine above the perforations was noteworthy. The fistulous portion of the intestine was resected. He uses this case as a basis for a general discussion of the subject. In acute obstruction with gangrene he does not consider immediate resection advisable, but reserves the operation for chronic fistula.

Acute Intestinal Obstruction.—McGill ("Brit. Med. Jour.," Jan. 14, 1888) records a case of acute intestinal obstruction due to the presence of a Meckel's diverticulum successfully treated by laparotomy. The diverticulum was found to pass from the small intestine downward and forward, and to be attached to the fundus of the bladder. A loop of intestine passed beneath this, the obstruction being caused by the twisting of the bowel at the point where the diverticulum was attached. The swollen intestine was with difficulty returned to the abdominal cavity, and, in sewing up the abdominal walls, the intestine was evi-

dently wounded by the suture, as on the tenth day a small amount of faecal matter escaped from the upper angle of the wound. This fistula healed in a fortnight. McGill condemns the use of opium after abdominal operations, unless indicated by severe pain, as seldom doing good to the patient and lulling the surgeon into a false feeling of security. In the case reported he administered a saline purge with apparent advantage.

Acute Intestinal Obstruction caused by the twisting of an Ovarian Tumor on its Pedicle.—Hochenegg ("Wien. med. Wochenschrift," April 12, 1888) gives complete notes of a case which presented symptoms of acute intestinal obstruction in a very marked degree. Laparotomy was performed, disclosing a multilocular cyst of the left ovary, which had become twisted on its pedicle. Similar cases have been reported only a few times. The ways in which occlusion of the intestine may be caused by torsion of the pedicle are: 1. The tumor may have become attached to the intestine or mesentery before the torsion occurs; then, when it happens, the intestine is wound about the pedicle and occluded. Such a case was reported by Rokitsansky in 1865. 2. A portion of intestine may be involved in the torsion, and so be completely closed. 3. The torsion shortens the pedicle so that it may pull the tumor into the upper pelvic strait, where it will press upon and close the rectum. 4. After the torsion, but before the venous stasis, a portion of the tumor may be carried into the true pelvis and there swell so as to compress the flexure or the rectum between itself and the bony walls. In the case related the author is inclined to believe the cause to have been a combination of the second and the last.

Intussusception during Pregnancy.—Wylie ("Glasgow Med. Jour.," April, 1888) relates a case of intussusception in a pregnant woman, with recovery after the passage of a large slough of bowel *per rectum*.

On the morning after she first complained of pain her abdomen was tender only over the caput coli, where an abnormal prominence could be felt. Laxatives and enemata failed to produce a movement until the afternoon of the fourth day, when she passed a large amount of hard faeces. On the twelfth day she passed a piece of solid tissue resembling sloughed bowel. During the next three days she lost a considerable quantity of blood, and then began a rapid convalescence. Two months later she gave birth to a healthy male child.

Inguinal Hernia.—Wright ("Med. Chron.," March, 1888) gives some good points on the management of inguinal hernia. He deprecates the habit of sending patients with hernias to instrument-makers to be fitted with a truss. Each patient not operated on should be fitted with a truss as carefully by the surgeon as a pessary is fitted by a gynecologist. "Gynecologists do not send their patients to instrument-makers to be fitted with pessaries," and a hernia is quite as important as a flexion of the uterus.

He enumerates certain causes which conduce to inguinal hernia in infants: 1. Congenital or acquired weakness of the inguinal walls, sometimes with general deficiency of muscular development. 2. Premature birth, and consequent feebleness of texture. 3. Delayed descent of testis. 4. Congenital hydrocele. 5. Phimosis. 6. A small meatus urinarius. 7. Constant fretfulness and crying, often with vomiting, usually from dyspepsia, the result of bad feeding and management. 8. Constipation. 9. Other intestinal irritants—as worms, prolapsus recti, etc. 10. Cough. 11. Irritability of the bladder from abnormal condition of the urine, stone, etc. 12. Too tight a binder around the abdomen. In addition to these there are rarer and less remediable causes—as extroversion of the bladder and adhesion of the testis to the bowel. He calls special attention to phimosis, as it is very imperfectly recognized as a cause, while it is, in his opinion, a very efficient one.

For infants he prefers a truss of rubber, or covered with rubber, with an inflatable rubber pad. It should not be double unless there are indications of weakness on the opposite side. This truss, he insists, "must not be taken off under any pretext or for any purpose whatever, night or day, without the surgeon's orders," because, if it is taken off in bed or in the bath and the hernia descends, the treatment has amounted to nothing as regards a cure; but if the hernia can be kept up for three, six, or more months, it will probably never return.

In adults, the size and direction of the rings and canal, the tone of the structures about the canal, the presence of a cause—such as stricture, constipation, piles, enlarged prostate, or chronic cough—and the

occupation of the patient, should be considered in determining whether it is a case for radical cure or for a truss, and, in the latter case, should guide in the selection. The truss should be applied by the surgeon while the patient is lying down, and the patient should test its efficiency by stooping forward, putting the hands on the knees, and coughing. If the hernia can be forced down in any way, the truss should be rejected.

Inguinal Properitoneal Hernia.—Torrey adds another to the short list of cases of this form of hernia ("Ann. of Surg.," March, 1888). The patient was a man, thirty years old, who had had for several years a hernia which he reduced, sometimes with considerable force and pain. Nine days before operation it became irreducible, and for five days there were symptoms of strangulation. The hernia was found to be of the congenital type, the testicle lying well down in the scrotum behind the hernia. In the vicinity of the internal abdominal ring an opening was found, leading into a pouch between the transversalis fascia and the overlying muscles, which contained a loop of intestine. The patient died three days after the operation, probably from his own imprudence in getting out of bed. It was not determined whether the pouch was a congenital diverticulum of peritonæum, or was caused by the violent efforts at taxis, but the operator favored the latter view. After a rather extensive consideration of the literature on the subject he finds on record only thirty-five cases, including his own, with twenty-eight deaths, since 1749.

Strangulated Hernia with Absence of Local Pain.—Attention has been called to the fact that strangulated hernia may exist without the existence of local pain to guide the surgeon to the actual condition by several articles lately in the "Lancet." In the issue for March 17, 1888, two cases are reported by Mr. Shaw and Mr. Simpson. One was a case of femoral, the other of inguinal, hernia. Attempts at taxis did not elicit any complaints of pain, although in each a portion of intestine was severely strangulated. The condition is one which needs to be borne in mind, as cases are on record where patients did not know that they were suffering from hernia, and the examinations which revealed the true condition were prompted by the general condition of the patients.

Tumor of the Intestine with Symptoms of Biliary Colic.—Lewtas ("Brit. Med. Jour.," Feb. 25, 1888) briefly records a case in which, after presenting symptoms which seemed to be characteristic of hepatic colic, the patient passed *per rectum* a lymphoma, square in shape, an inch and a half broad and a quarter of an inch thick. He had a dull pain in the right side of the abdomen for some days, and then regained his health.

Lumbar Colotomy.—Allingham ("Brit. Med. Jour.," April 28, 1888) considers that the ascending and descending colons are surrounded by firmly adherent peritonæum much more frequently than is popularly supposed. In his examinations of sixty subjects he found the posterior portion of the colon uncovered by peritonæum in only eleven on the right side and ten on the left. He insists upon the necessity of observing the longitudinal bands of the colon before opening the intestine in order to guard against mistake. Neglect of this precaution has resulted in opening the stomach, the descending portion of the duodenum, and the small intestine. While covered with peritonæum these bands are plainly discernible, but are often difficult to see after the peritonæum is stripped away. When the peritonæum covers one half or two-thirds of the gut, it is reflected usually at the longitudinal bands, which are then not visible until the peritonæum is stripped away. When there is difficulty in demonstrating these bands he advocates incising the peritonæum for exploration. Incision of the peritonæum is necessary also whenever a mesocolon is present.

The best incision is, he holds, one with its center half an inch posterior to a point midway between the anterior and posterior superior spines of the ilium and midway between the last rib and the crest of the ilium. It should be only two or three inches long, as this compels the operator to cut precisely to the place where the colon generally lies. Other advantages of the small wound are that there will be no prolapse of the gut and that a considerable sphincteric power will be obtained. When the mesocolon is very long the wound has to be enlarged so as to admit the hand to search for the colon.

He does not advise lumbar colotomy where it is possible to perform

the inguinal operation, as it is more difficult, the risks are greater, and the results not so satisfactory.

Floating Kidney.—Niehans ("Ctrlbl. f. Chir.," No. 12, 1888) professes to have used with excellent result an apparatus for holding the kidney in place. This apparatus consists of a pad pressing upon the tissues in front of the kidney, attached by a ball-and-socket joint to a steel band fastened below to an ordinary double truss. It was also secured in position by an elastic band passing about the waist. It was applied while the patient was lying down, after the kidney had been placed in its normal position, and was worn during the day, but removed at night. The patient upon whom he tried it was in a state of constant suffering and could not stand or sit over ten minutes without being obliged to lie down on account of the pain. Her general condition also was poor. Relief was immediate and very marked. The pain completely disappeared and her general condition began to improve. Some months later she reported that she was free from pain while she wore the apparatus, but that when she removed it and went about the pain returned in about a quarter of an hour.

Rupture of the Urethra.—Erasmé ("Ann. des mal. des org. gén.-urin.," March, 1888) advocates in complete rupture of the urethra the coaptation of the torn ends by means of catgut sutures not passing through the mucous membrane. He details a case operated on by him in this manner, a large catheter having first been introduced and the ends, which were quite widely separated, drawn together. The muscles and other superficial tissues were then brought together with sutures. A little urine escaped from the wound during the first day or two, none after the fifth day. The patient was discharged three weeks after operation quite well. No stricture could then be detected.

Tubercular Joint Affections.—Gerster ("Ann. of Surg.," April, 1888) calls attention to two therapeutical aids which do not in his opinion receive the attention they deserve.

The first is the prolonged, properly graduated, dry refrigeration of the joint, combined of course with rest. Koch has shown that if the cultivation material is cooled 2° C. below the normal temperature of the human body the growth of the *Bacillus tuberculosis* is checked. If its growth is thus checked time is afforded to strengthen the power of resistance of the organism by proper diet and medication and the healthy tissues can throw up protective walls about the focus of disease.

The second is the "early ferreting out and surgical evacuation of tuberculous cheesy foci located in the epiphyses of the bones entering into the formation of this or that joint." How to locate the deep-seated foci of tuberculous material is not very clear, but he is confident that surgical ingenuity will discover a safe and satisfactory method. The superficial foci can be diagnosed and should be exposed and emptied at once.

Early operations are justified and indicated in tubercular diseases of the joints, especially of those of the lower extremity, of adults in poor circumstances. In children, however, general and orthopædic treatment should be first instituted and diligently persisted in as long as possible. In adults typical excisions are preferable, but in children only the parts actually diseased should be taken away. The employment of rough force with retractors, or blunt methods of preparation where clean work with the knife is admissible, is deprecated as tending to the "operative dissemination of tuberculosis." The injurious effects of passive motion after operations are emphasized strongly. "The greater the surgeon's energy the worse the result, and in many cases ankylosis is brought on by the very measures intended to prevent it."

Tubercular Necrosis of Cranial Bones leading to Perforation.—Barling ("Lancet," March 31, 1888) gives notes of two cases of tubercular necrosis of the cranium. One was in a girl seventeen years of age. Two years before coming under observation a swelling had appeared, without injury, and pus had been evacuated. A persistent ulcer was left over the right side of the frontal bone, a little above the orbit. Several sequestra were removed, leaving an aperture an inch in diameter. The patient also had strumous disease of the joints. There was nothing suggestive of congenital syphilis in her appearance or history.

In the other case several patches of necrosis of the cranial bones were found post mortem in a child, a year and a half old, who had been under treatment for vertebral caries.

Scrofulous Neck and its Treatment.—Gibb ("Glasgow Med. Jour.," Jan., 1888) draws the following conclusions from his observations and researches regarding scrofulous neck:

1. In scrofulous disease of the cervical glands we have a tubercular process of a mild type, seldom leading to generalized infection, but perhaps occasionally doing so; frequently concerned in predisposing to or even directly occasioning phthisis pulmonalis; and in the majority of cases deteriorating the general health.

2. Tubercular disease of the cervical glands is too often allowed to go on to a disastrous extent without any active steps being taken to arrest its course, largely from a prevalent indifferent and helpless feeling on the part of the medical profession.

3. Slight cases, being of course offered every possible advantage in the matter of constitutional treatment, should be carefully watched, and if, after the lapse of months, or it may be a year or two, we find the disease spreading, it is wise to extirpate the affected glands while they are yet movable. In such cases the operation will be easy and little or no deformity need result.

4. Surgical interference is demanded whenever a sinus resulting from a degenerated gland exists, whenever pus can be detected in connection with a gland, and whenever there are enlarged glands accessible to surgery in a patient in whom a caseous or suppurating gland has already been discovered.

Scrofula and Tuberculosis.—Eve ("Brit. Med. Jour.," April 14, 1888) details a number of experiments which he has performed for the purpose of demonstrating the relation between scrofula and tuberculosis. He professes to have shown that the virus of strumous gland disease produced visceral tuberculosis in rabbits as well as in guinea-pigs, but admits the disease in rabbits to be less acute and rapidly fatal than that which follows inoculation with acute miliary tubercle. This difference he maintains is only one of degree, caused, not by a specialized form of virus, but by the locality or soil in which the virus is planted. To admit that the virus producing the disease is *ab initio* specialized would be to infer that strumous disease could be produced by the virus of struma and no other. Finally, he objects to the use of the terms "scrofula" and "struma" for lesions resembling tuberculosis.

The Communication of Tuberculosis by Ritual Circumcision.—Eve ("Lancet," Jan. 28, 1888) relates a case which came under his observation where circumcision was performed in the Jewish manner by a phthisical rabbi. The child was circumcised when eight days old. Six weeks afterward the mother noticed a small swelling in each groin, and consulted a medical practitioner, who found that the circumcision had "broken out again," or had not healed. When the child was five months old he came under the care of Mr. Eve. At that time there was a superficial sore at the frenum and a large abscess in each groin. The caseous material in the abscesses, injected beneath the skin of a guinea-pig, induced general tuberculosis of the animal.

A child in another family, circumcised by the same rabbi, exhibited similar symptoms.

Suppuration and Septic Diseases.—Mr. W. W. Cheyne presents concisely the views at present held upon this subject ("Lancet," Feb. 25, March 3 and 10, 1888). First he describes the various pyogenic organisms—fourteen in number—their occurrence in disease, and the relations of certain varieties to each other. He believes that these pyogenic organisms are essential for the production of these diseases, but that in many cases much depends on other conditions, of which the chief are probably the dose or number of the organisms and their concentration, general and local depression of vitality, and seat of inoculation. The only factor to be reckoned on with certainty is the cocci. In man, mixture of species usually increases the pathogenic action of the organisms. Their virulence also differs at different times.

Empyema of the Superior Maxillary Antrum with only Nasal Symptoms.—Dr. McBride ("Edin. Med. Jour.," April, 1888) calls attention to the fact that suppuration of the lining membrane of the maxillary antrum is not always attended by pain, swelling, and distension of the osseous walls of the cavity. Sometimes the only symptom complained of is a constant or periodic discharge of pus from the nose, usually from only one nostril, but it may be from both. When the cases come under observation they have become chronic, and present neither pain nor discomfort, but careful questioning may elicit a history

of faceache, or at least a period of discomfort in the region of the cheek. In a few cases frontal headache is complained of, probably caused by closure of the frontal sinus by the tumefaction of the nasal mucous membrane about the openings of the antrum and the frontal sinus. To diagnosticate this condition the nostril is cleaned out and the absence of any foreign body, ulceration, inflammation of the bursa pharyngea, ozæna, or caries is determined; the discharge is seen to reappear at once in the middle meatus; the nostril is again cleaned out and the patient made to sit with his head bowed down, a position which renders drainage from the frontal sinus impossible. If, now, on re-examination, pus is found in the middle meatus, it must have come from the antrum.

McBride also calls attention to a condition which he does not know to have been hitherto observed—a marked redness of the gum corresponding to the affected antrum.

The usual cause is carious teeth, but a case is cited which shows this may not be the only one, the cause in this case seeming to be the use of the nasal douche.

Regarding treatment, he favors a counter-opening through the socket of a tooth, through the alveolar process, or through the outer wall of the nose, so as to obtain free drainage, and then systematic irrigation of the antrum.

Carbuncle.—Mr. Page, Mr. Owen, and Mr. Parker, in three separate articles on this subject in the "British Medical Journal" for March 24 and 31, 1888, advocate complete removal of all diseased tissue as far as possible. Parker recommends excision, but combines it with scraping, upon which the other gentlemen depend. The use of caustics is condemned. Unless the diseased tissue is removed it will have to be detached by nature by a slow and tedious gangrenous process, during which the patient is subjected to many risks which may be avoided by operation. Still, so high an authority as Sir James Paget recommends no operative interference.

This method seems very severe to Mr. Lowndes (*ibid.*, April 7th), who injects a solution of carbolic acid, of the strength of one to forty, three or four times a day into the carbuncle, and then applies warm linseed poultices. He professes to have had no case which has not yielded rapidly to this mode of treatment.

Carcinoma of the Breast.—Gross ("Am. Jour. of the Med. Sci.," March, April, 1888) presents an exhaustive clinical study of carcinoma of the female breast, based on 1,842 cases gathered from various sources.

It most frequently develops between forty-five and fifty, the extremes noted being twenty-one and eighty-four years. It has not been observed during the developmental state of the mamma, but is a disease of the obsolete or obsolescent breast. When the affection commences before the climacteric the breast is beginning to become useless in consequence of the greater proportion of connective-tissue stroma. Regarding heredity, he holds that there is no inheritance of a particulate body, virus, germ, or blood disease, but that there is of a peculiarity of the structure of the breast, particularly of its epithelial elements, which predisposes it to the occurrence of cancer. The connection between cancer and mastitis, either puerperal or not, is doubtful. Deep lesions of the nipple may exert an influence in favor of its development. Contusions are efficient causes by inciting an atypical growth of epithelium in the involuting breast. The social condition exerts no influence. The eczema of the nipple and areola is not a precancerous condition, but indicates the early stage of cancer occurring in an unusual situation.

It occurs a very little more frequently in the left breast than in the right, more often in the upper and outer quadrant than elsewhere, and is usually solitary, rarely multiple. The rate of growth is not influenced by the age of the patient, but when it appears during pregnancy or lactation it is excessively malignant.

Among the earliest symptoms he notes the dimpling or pitting of the skin over the tumor, independent of carcinomatous adhesion, but caused by shortening of fibrous bands which pass from the posterior surface of the skin into the interior of the breast. Retraction of the nipple he finds rarely referred to by writers, but has noted in 52 per cent. of his own cases, while in non-carcinomatous growths it occurs in only 5 per cent. In one third of the cases in which a spontaneous discharge from the nipple was noted it preceded the detection of the tumor. In 88 per cent. there is real pain, varying in intensity and

character, in 8 per cent. there is simply a sensation of discomfort or weight, while in 4 per cent. there is no suffering whatever.

Invasion of the skin is the earliest perceptible sign of local malignancy, and is marked by adhesion, discoloration, the formation of tubers, or ulceration. It appears on the average 15.8 months after the detection of the tumor, but has been known to appear as early as two weeks or to be delayed for several years. Then comes invasion of the glands, the muscles of the chest, the ribs, the pleura, the anterior mediastinum, and the opposite breast. These indicate local infection by extension or growth of young epithelial cells along the course of the lymphatics and circumvascular lymphatic sheaths, and the transfer of cells by the lymphatics to the lymphatic glands. Immobility of the tumor on the subjacent tissues occurs about twenty-two months after the appearance of the tumor—i. e., six months after adhesion of the skin and two months after ulceration. Invasion of the opposite breast is noted in only 2.85 per cent.

The glands, when affected, delay metastatic deposits for a time, but constitute new foci of infection. How often they become enlarged simply as a result of irritation is uncertain. Several cases are on record where enlarged glands have subsided and the patient lived free from disease, showing that enlarged glands are not always carcinomatous. The axillary glands were found to be involved in 68 per cent. In addition to the axillary glands, the supraclavicular were involved in 5.44 per cent., the subclavicular in 1.34 per cent., and the cervical in 1.6 of 1 per cent. The seat of the carcinoma exerts no influence on the frequency or the date of appearance of the lymphatic tumor. When the glands are infected the chances of removing the entire disease are greatly lessened, the recurrence is more rapid, and the patients succumb sooner.

Metastases occur without implication of the glands in one seventh of all cases with this complication. Hence it appears that infection may take place through the blood-vessels and that the absence of an enlarged gland is not an absolute guarantee that the viscera have not already been invaded. The date of their occurrence varies from five months to eight years after the appearance of the tumor, but averages 29.4 months. The lungs suffer rather more frequently than the liver.

The thickening of the upper end of the humerus with tenderness on pressure, described by Snow as "a neglected symptom in breast cancer," he has met with only once in one hundred and seven cases. Secondary deposits were found in the humerus in only five out of three hundred and thirty-six post-mortem examinations, and in two of these the bone had been fractured. Hence he does not consider the observations of Snow to be correct.

His conclusions regarding prognosis are that when left to itself carcinoma inevitably kills; that about 14 per cent. die from the operation, but ten months are added to the lives of the remainder; that operations definitely cure about 12 per cent. of all patients, nearly as many as they destroy; that the patient is safe from reproduction if three years have elapsed since operation; and that recurrence may be delayed, if not prevented, by cleaning out the axilla at the same time that the breast is removed.

Gross condemns the ordinary oval incision for amputation of the breast as apt to leave involved tissue. The plan which he has employed for some years, and which he advocates, is the most extensive, and involves the greatest loss of tissue of any operation yet advocated. A line is drawn with an aniline pencil around the entire circumference of the breast and, if the tumor is peripheral, at least an inch beyond its apparent limit. Along this line an incision is made down to the pectoral muscle and the breast is removed, together with the pectoral fascia. The fat around the line of incision and the pectoral muscle are carefully searched for nodules, which, if any are found, are freely removed. The axillary glands are then extirpated. After thorough irrigation with a 1-to-1,000 solution of bichloride of mercury, the edges of the wound are brought as nearly together as possible. This can be quite done in thin women with small breasts after loosening the skin flaps above and below from the subjacent tissues, but in fleshy women with large breasts a space must be left to granulate. He maintains that this operation affords better results than any other, that of Banks seeming to be nearest to it.

When the contents of the axilla form a large, nodular tumor, and

the disease has existed for some time, he advises attacking the axilla first, because, if it proves impossible to remove the entire disease, the amputation of the breast involves an unnecessary operation.

Lipomata of the Sheaths of Tendons.—Sprengel ("Ctrlbl. f. Chir.," 1888, No. 9) reports a unique case of lipomata occupying the sheaths of the tendons of the peronei and of the extensors of the toes about both ankles. The swellings had grown slowly, were not painful on pressure, were symmetrically arranged on each foot, and were shaped like hygromata, from which they were not diagnosticated previous to operation, although they had no fluctuation or crepitation. The tumors seemed to have grown in the synovial coverings of the tendons, without involving the tendons themselves, or the parietal layer of synovial membrane.

Haeckel (*ibid.*, No. 17) describes a case of lipoma arborescens of the sheaths of the extensor and flexor tendons of the hands which occurred in the clinic of Professor Braun. The swellings were painless, except those on the palmar surfaces of the first phalanx of the third and fifth digits of the left hand. The first symptom noticed was pain in the index-finger three years before, followed by the appearance of the swellings in the flexor tendons. The removal of the tumors was followed by complete disappearance of the pain and disability incident upon them.

Tumors of the synovial sheaths of the tendons, aside from hygromata, are rarely met with; so much so that these two writers are able to cite but one more case which they have found in literature—a case described in a dissertation by Haumann, closely resembling Haeckel's case.

Ganglion in the Palm of the Hand as a Cause of Neuralgia.—Witzel ("Ctrlbl. f. Chir.," 1888, No. 8) gives a detailed account of three cases in which cysts of the synovial sheaths of the flexor tendons in the palm or on the palmar surface of the fingers were removed. The tumors presented the appearance of small, hard knots beneath the skin, and seemed to cause neuralgia of the median or ulnar nerves by pressure on some of their branches. The neuralgia varied in intensity, extended from the hand to the shoulder, and was immediately relieved by the removal of the tumor.

A similar case is reported by Plenio (*ibid.*, No. 15).

Surgical Dressings.—Laplace ("Ctrlbl. f. Chir.," 1888, No. 7) examined dressings impregnated with two-and-a-half-, three-, and four-per-cent. solutions of corrosive sublimate in order to determine whether or not they were either aseptic or antiseptic. He found one hundred specimens of gauze to be free from germs, and found only seven which were not sterile out of three hundred specimens of wood-wool. But, as regards antisepsis, he found the dressings unreliable, and concluded that their value depended on their aseptic condition when applied. The plain sublimate solution was efficient to destroy germs in non-albuminous fluids, but in albuminous fluids a precipitate of albuminate of mercury was formed, which left the fluid inert. This precipitation could be prevented by the addition of tartaric acid to the solution in the proportion of five parts of tartaric acid to one of bichloride of mercury. The mercuric salt he found to dissolve more readily in a solution of tartaric acid than in water. The acid mixture remained incorporated in the dressings without destroying them, rendering them both aseptic and antiseptic. It is also inexpensive and easily made.

Miscellany.

The National Association of Railway Surgeons held a preliminary meeting in Chicago on the 28th of June. Dr. C. B. Stemen, of Fort Wayne, Ind., was called to the chair, and briefly stated the objects and prospects of the organization. At present it includes about six hundred members, representing sixty-three railways. Officers for the ensuing year were elected as follows: President, Dr. J. W. Jackson, of Kansas City, Mo.; vice-presidents, Dr. J. H. Murphy, of St. Paul, Minn., Dr. J. B. Murdock, of Pittsburgh, Pa., Dr. A. W. Ridenour, of Massillon, O., and Dr. B. L. Hovey, of Rochester, N. Y.; secretary, Dr. C. B.

Stemen, of Fort Wayne, Ind.; assistant secretary, Dr. J. H. Tressel, of Alliance, O.; corresponding secretary, Dr. E. R. Lewis, of Kansas City, Mo.; treasurer, Dr. J. Harvey Reed, of Mansfield, O. The next meeting will be held in St. Louis.

Chlorosis and Heart Disease.—The "Lancet" says: "Excessive anæmia being present, and the heart not being hypertrophied, the diagnosis of the cause of heart murmurs is frequently very difficult. M. Duclos has returned to this battle-field of clinicians, and sums up his conclusions in the following propositions: In true chlorosis, no matter the number and site of the cardiac murmurs, the basic murmur is never absent, and is most often systolic. In true chlorosis the carotid murmurs, varied and more or less marked, are always present. In genuine chlorosis the bruits are generally more intense and more extensive than in heart disease, and are markedly out of proportion to the circulatory disturbance; further, the cardio-pulmonary circulation remains free, and any disturbance in it indicates the persistence of a valvular lesion, and generally of the mitral valve. We do not join issue with M. Duclos in the general tone of his arguments, which are sound enough so far as they go; but the most frequent clinical difficulty is not so much the differential diagnosis of severe chlorosis from heart disease as it is the distinction or discovery of valvular lesion in the presence of less marked anæmia."

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 13th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 23d corresponded to an annual rate of 15.5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Nottingham, viz., 9.9, and the highest in Preston, viz., 24.3 in a thousand. Small-pox caused 5 deaths in Sheffield, 2 in Preston, 1 in Manchester, and 1 in Leeds. Diphtheria caused 2 deaths in Leicester, 2 in Salford, and 2 in Leeds.

London.—One thousand one hundred and ninety deaths were registered during the week, including measles, 18; scarlet fever, 10; diphtheria, 15; whooping-cough, 33; enteric fever, 15; diarrhœa and dysentery, 18. The deaths from all causes corresponded to an annual rate of 14.5 in a thousand. Diseases of the respiratory organs caused 184 deaths; different forms of violence, 63, and 10 suicides were registered. In greater London 1,486 deaths were registered, corresponding to an annual rate of 14 in a thousand of the population. In the "outer ring" 11 deaths from whooping-cough and 9 from diphtheria were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending June 23d in the sixteen principal town districts of Ireland was 21 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 0, and the highest in Sligo, viz., 38.5 in a thousand. In Dublin 140 deaths were registered, including whooping-cough, 4; enteric fever, 1; scarlet fever, 2; and dysentery, 1.

Catania, Italy.—Two hundred and thirty-six deaths were registered during the month of April, including small-pox, 18, and enteric fever, 10.

Ceara, Brazil.—One hundred and forty-eight deaths were registered during the month of May, including 4 from yellow fever.

Ruatan, Honduras.—The following is the report of the United States consul, under date of June 30th: "Hæmorrhagic pernicious fever, dangerous to all persons not acclimated. Four deaths during this month."

Havana, Cuba.—Four hundred and ninety-eight deaths were registered during the month of June, 1888, including yellow fever, 38; enteric fever, 11; pernicious fever, 7; malarial fever, 6; small-pox, 13; diphtheria, 1; and croup, 2. The sanitary inspector states that "30 of the deaths from yellow fever occurred in the military hospital, and among persons belonging to the army, which is composed entirely of soldiers sent out from Spain. Small-pox continues to diminish. Up to the present time this season it is not known that any vessel of the merchant marine in this harbor has been invaded by yellow fever."

Santiago de Cuba.—Malarial fevers and diarrhœa are reported prevalent. The military hospital is free from yellow fever, and no small-pox has been reported.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Calcutta	May 19.	433,219	223	30						
Amsterdam	June 23.	389,916	156					1		
Rome	May 5.	388,300	173			2		2		1
Munich	June 16.	275,000	149					2	3	2
Genoa	June 23.	179,448	68							1
Trieste	June 16.	154,500	69			5				1
Toronto	June 30.	130,000	27							1
Stuttgart	June 23.	125,510	38							
Bremen	June 16.	122,000	32							
Havre	June 16.	112,074	60			2		5		
Pernambuco	June 12.	110,000	82					3		
Barmen	June 16.	109,000	34							1
Cienfuegos	June 25.	40,573	20							
Curaçoa	June 23.	25,000	6							
Vera Cruz	June 21.	23,800	13							
Gibraltar	June 17.	23,631	7							
Kingston, Can.	June 29.	16,216	3							
Antigua	June 17.	15,847	18							
St. Thomas, W.I.	June 22.	15,000	7							
Matamoros	June 23.	12,000	5							
Laguayra	June 23.	7,428	5							
Livingston	June 30.	2,500	4							

UNITED STATES.

San Francisco, Cal.—Eleven cases of small-pox were reported during the month of June, but no deaths. Two deaths were reported up to July 4th.

Memphis, Tenn.—The medical officer in charge of the Marine-Hospital Service reports one case of small-pox sent to the city pest-house July 9th. The patient came direct from St. Louis the day before.

Plant City, Fla.—*Yellow Fever.*—The following information was received under date of July 10th: "Only about thirty persons in the place who have not had fever. Five new cases reported to-day. Total population, 200. Most of the unacclimated moved out. Guard around place to prevent communication."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Philadelphia, Pa.	July 7.	1,016,758	423			3		9	4	4
Baltimore, Md.	July 7.	431,879	241					2		
New Orleans, La.	June 30.	248,000	140					1		6
Cleveland, Ohio.	June 9.	225,000	73					1	1	5
Cleveland, Ohio.	June 16.	225,000	67					3		5
Charleston, S. C.	July 7.	60,145	53							

THERAPEUTICAL NOTES.

An Application for Toothache.—The "Progrès médical" credits Guild with a method of treating carious toothache by means of a mixture of equal parts of crystallized carbolic acid and flexible collodion, which is to be carried to the bottom of the cavity. The pain is said to disappear instantaneously.

An Antiseptic Dentifrice.—Le Gendre ("Concours méd."; "Gaz. hebdom. des sci. méd. de Montpellier") gives the following formula for an antiseptic tooth-powder, to be used for the prevention of dental caries:

Finely powdered boric acid..... 375 grains;
 Chlorate of potassium..... 300 "
 Powdered guaiacum..... 225 "
 Prepared chalk,
 Powdered carbonate of magnesium, } each.. 600 "
 Essence of rose or of mint..... 10 drops.

The Influence of Temperature on Cocaine Convulsions.—At a recent meeting of the *Académie des sciences* ("Gaz. hebdom. de méd. et de chir."), a note by M. Langlois and M. Richet was read in which the authors announced their observation that elevation of temperature

favoured the occurrence of convulsions after the use of cocaine. Five times as much cocaine could be injected into a dog in a cold bath as into one in a warm bath without producing convulsions; if the dog was taken from the cold bath and warmed, violent convulsions took place without any fresh injection.

ANSWERS TO CORRESPONDENTS.

No. 203.—Either of the two conditions you mention may be met with, according as the disease is situated in the tympanum or in the labyrinth. See Dr. Pomeroy's article in our issue for June 23d, page 676.

No. 204.—Kefir is the product of a fermentation of milk, said to be due to the *Bacillus caucasicus*, existing in the so-called kefir-grains. We know of no particular formula for its preparation. It may be ordered of the Dexia-Kefir Co., 1210 Third Avenue, New York.

No. 205.—In Washington, on the 18th, 19th, and 20th of September.

No. 206.—They are separate works. Both are published by Messrs. Lea Brothers & Co., of Philadelphia.

No. 207.—By using large electrodes, applying them before turning on the current, and holding them as motionless as possible.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

SUDDEN HEART-FAILURE.*

By A. S. COE, M. D.,
OSWEGO, N. Y.

It is the prevailing opinion of the profession that the origin of organic heart disease in nine cases in ten is rheumatism; the endocardium becomes inflamed, and plastic lymph is exuded in the duplicatures of the valves, which in time becomes organized into adventitious tissue, and contracts and shortens them, thereby impairing or destroying their functions. But to compensate, the muscular fibers of the heart, to meet the increased demand caused by impairment of the valves, increase and strengthen. These structural changes are gradual, and the growth of the muscular structure of the heart keeps pace with the increasing inefficiency of the valves, so that for a long time normal circulation is maintained. As long as the hypertrophy is compensatory no great inconvenience is felt, and persons so afflicted and otherwise healthy may pursue their usual vocations without suffering. In this form of the disease the valves are primarily affected, the physical signs are generally well marked, and the extent of the lesions and structural changes is easily ascertained. The physical signs are much more pronounced than the rational—the hypertrophy is generally concentric—hence the heart is able to maintain the normal circulation longer, and is less liable to sudden and violent disturbance of its regular and rhythmic action, than it is with other forms of hypertrophy having their origin in obstructions other than impairment of the valves.

My observation and experience are that the more frequent cause of organic disease of the heart is other than rheumatism, and the valves are not primarily affected in these cases. It is the custom to look for valvular lesions, and, not finding them, the conclusion is reached that there is no organic disease, and the disturbance of the heart's action is attributed to other causes, nervous or sympathetic, when in reality there are serious heart lesions threatening sudden heart-failure and immediate dissolution. In these cases too little importance is placed upon the rational signs and too much stress upon the physical signs; but there will be invariably found, if sufficient care is taken, an increase of cardiac dullness, indicating more or less hypertrophy. For a long time I was much puzzled at the sudden and distressing attacks of dyspnoea and orthopnoea in persons who had passed middle life and who had never suffered from rheumatism or any other serious illness, but had observed an increasing shortness of breath upon physical exertion, such as ascending a hill or a flight of stairs; otherwise they never had been conscious of illness of any sort. I was unable to find physical signs of heart disease at all commensurate with the rational signs which pointed unmistakably to heart disease. Several of these patients, with the slight warning of growing shortness

of breath, were suddenly seized with a frightful paroxysm of dyspnoea and orthopnoea, soon after followed by general anasarca. Fortunately we succeeded in obtaining permission to make an autopsy on one of these cases.

CASE I.—William H. W., aged sixty-six, always had been temperate, never had been seriously ill, and never had had rheumatism up to the time when the shortness of breath became troublesome, save two or three severe attacks of angina pectoris recurring about once a year. As there were no well-marked physical signs of heart disease at the time, they were thought to be due to acute indigestion. The increasing shortness of breath and attending discomforts had finally compelled him to remain in his house much of the time. He was under the professional care of Dr. McF., and, as there was considerable obscurity as to the cause of his ill-health, he invited me to consult with him. I found no physical signs of valvular lesions, but considerable increase of cardiac dullness; the heart's action regular in rhythm. Soon after, the severe paroxysms of dyspnoea began, recurring once or twice in twenty-four hours and lasting from half an hour to an hour. As the disease progressed the paroxysms increased in frequency and severity, and his struggles for breath were distressing to behold. About the time the severe paroxysms began general anasarca set in, beginning in the lower extremities, rapidly extending from there to the body. The only remedy found which mitigated his sufferings was a half to three quarters of a grain of morphine administered hypodermically. Along toward the end there developed unmistakable evidence of disease of the semilunar valves. The autopsy revealed greater hypertrophy of the heart than was imagined before death. The enlargement was mainly in the long axis and antero-posteriorly, the lateral expansion was slight, and the hypertrophy was further masked by ossification of the costal cartilages, and the rounded contour of the heart prevented the usual impact of the apex against the chest-wall. Upon opening the cavities, the left auricle was found to be normal. The mitral valves, save atrophy of one of the muscular columns or supports of the chordæ tendineæ, were healthy. A bony plate or beginning of calcareous degeneration of the lining of the ventricle was found; the semilunar valves were thickened, corrugated, and somewhat contracted, leaving an opening of about the size of a goose-quill. The ventricle itself was enormously dilated, and its walls were very much thickened. There was no degeneration of its muscular fibers. The inner membrane of the aorta, extending down into the left ventricle, was thickened and had lost its transparency. About two inches above the aortic opening the lumen was surrounded with bony plates, with sharp projecting spiculæ. No further examination of the aorta was made, but I have no doubt that the calcareous degeneration extended much farther. The heart weighed, after being freed from every particle of blood, twenty-two ounces. We found sufficient to explain the obscurity of the physical signs and the pronounced rational signs at the beginning of the attack.

I have no doubt that this is a typical case of sudden heart-failure occurring after middle life in strong and vigorous people, who never had rheumatism or other serious illness, which is usually diagnosticated as sudden heart-failure due to fatty degeneration or some other cause than the right one, a diagnosis which is based upon pure conjecture and is guess-work. Fatty degeneration and malaria are two very useful terms; they save much trouble and cover much ignorance, and are useful in satisfying a popular demand.

* Read before the Medical Society of the County of Oswego, N. Y., June 12, 1888.

In my opinion, idiopathic fatty degeneration is the rarest of all diseases of the heart. There is necessarily much obscurity in these cases, which can not be fully cleared up without an autopsy. It is evident in this case, as in other cases mentioned further on—in which, unfortunately, there were no autopsies made to verify the diagnosis—that the structural changes had been progressing during many years without causing a particle of ill-health or inconvenience, and it began as a chronic endarteritis in the aorta, progressing slowly and insidiously, followed by atheroma and calcareous degeneration; by continuity it had invaded the semilunar valves and left ventricle, in which the degeneration was well advanced. The elasticity of the aorta was slowly lessened and finally destroyed, and there was more or less arterial stenosis caused by the bony deposits, which increased the obstruction to the circulation. These obstructions were so gradual in their progress that the heart was able to maintain a normal circulation by an increase of its muscular fibers during many years before it had passed the boundary between the normal and abnormal. In cases of aortic obstruction the strain upon the left ventricle is much greater than that due to the inefficiency of the semilunar valves; hence the hypertrophy is more apt to be eccentric, and as soon as the hypertrophy ceases to be compensatory the disorders of the circulation rapidly increase, the right side becomes congested and the pulmonary arteries engorged with venous blood, and aeration impeded; hence the distressing paroxysms of dyspnoea.

Why the patient is unable to lie down during the paroxysms of dyspnoea I have never seen satisfactorily explained. The cause of these slow and insidious structural changes of the arteries is imperfectly understood. It is sometimes attributed to high living, the use of highly seasoned and stimulating food and vinous and alcoholic beverages; also to a gouty diathesis; but it often occurs in persons of temperate living and freedom from hereditary taint of any kind, of which the foregoing case is a noticeable instance. Many of our leading public men and generals of the late war who have recently passed suddenly away with heart-failure—such as, say, Stanton, Halleck, Thomas, Burnside, Meade, Warren, and McClellan, and the last to be stricken down in apparent health, General Sheridan—I have no doubt had this form of disease. From so many notable instances it is probable that intense strain from the excitements of public life, exposures of the field, mental anxiety, sense of tremendous responsibilities, and irregularities of living, are potent factors of its causation.

The prognosis is generally unfavorable, although it does not always imply an immediate fatal termination. Nature very frequently, in the apparently hopeless cases, threatening immediate dissolution, comes to the relief of the sufferer. The paroxysms of dyspnoea lessen in frequency and severity, the œdema gradually disappears, and the sufferer is granted a respite from his extreme distress, sometimes lasting years from the time of the initial paroxysm; but it is a life of apprehension and dread, physical incompetency, fruitless endeavor, and hope constantly deferred. Many of them die within a few weeks from the time of the first distressing paroxysm of dyspnoea and orthopnoea, followed

by general anasarca. Acute delirium in the more sudden cases of dyspnoea is frequent, probably due to cerebral anæmia, and the result of the impeded pulmonary circulation and defective aeration. The delirium is peculiar in that the sufferer becomes suspicious of and acquires an antipathy to his nearest and dearest friends and attendants, and is often possessed of fantastic and grotesque fancies.

But little can be said relative to treatment in the more severe cases. As the physical signs are no measure of the extent of the organic lesions and the rational signs often exaggerate the immediate danger, the treatment is necessarily tentative. As the rational signs are altogether out of proportion to the physical signs, it is impossible to ascertain the extent of the organic lesions, and in some cases the paroxysm appears threatening and death imminent, but the attack soon passes off and the sufferer regains his usual appearance of health, vigor, and cheerfulness; on the other hand, all the vaunted heart stimulants, tonics, and restoratives equally fail. I have found morphine given hypodermically the most useful remedy on the whole. I try pretty regularly digitalis or digitalin, nitrite of amyl, nitro-glycerin, ether, and so on. As they all are apt to fail to give relief in the more severe cases, as a final resort I inject the morphine. Next to morphine, I have obtained the most decided relief from nitro-glycerin. I have given strophanthus only in one case; the result was negative. If the patient is robust, to relieve the overburdened circulation and anasarca I resort to the saline hydragogues. The old remedy, pulvis purgans, is very efficient for that purpose. The infusion of digitalis combined with acetate of potassium I find the most efficient heart tonic and diuretic, but it is apt to derange the stomach after a few doses are taken. In those cases in which the disease resists all remedies for any considerable length of time it is safe to consider that the organic lesions are of a grave character, and the prognosis should be very guarded. After an autopsy the wonder is not so much at the inefficiency of remedies as that a person could exist so long with the organic lesions found. In many of these cases disease of the kidneys co-exists with disease of the heart; in many of them albumin is found in the urine in small quantities without casts or other evidence of organic disease of the kidneys.

CASE II.—Mrs. W. H. W., aged sixty-six, wife of the foregoing, about six months previous to his illness was suddenly seized with a most distressing paroxysm of dyspnoea with passive congestion of one of the lungs, soon followed by bloody sputa. She had never had rheumatism and had always enjoyed excellent health, and was a person of extraordinary energy and public spirit. Upon inquiring into the history of the case, she had not been aware of any particular ill feeling up to the time of the paroxysm, but recalled to memory that her breath had been growing shorter upon ascending a hill or a flight of stairs during the preceding six months. There were no valvular lesions, but there was considerable hypertrophy; the apex-beat was below the fifth space outside of the nipple-line. Soon after the paroxysm, general anasarca set in, beginning in the lower extremities and one hand and arm simultaneously, and followed by acute delirium, which continued until her death. Her illness lasted from the middle of February till the last of April, 1884. No autopsy was made. The pneumonia subsided in a few days and gave but little trouble; it was wholly passive.

CASE III.—C. D., aged forty-eight, had had syphilis when a young man, which had passed into the tertiary stage. Occasional gummata made their appearance on various parts of the body and nodules on the scalp, which generally soon disappeared upon taking iodide of potassium; the nodules on the scalp occasionally suppurated, but soon healed. On October 28, 1883, he was seized suddenly while at his store with a distressing paroxysm of dyspnœa, with congestion at the base of one of the lungs, followed with bloody sputa. General anasarca with acute delirium immediately followed. The paroxysms of dyspnœa were frightful to behold, recurring two or three times a day and lasting from half an hour to an hour; finally the paroxysms were greatly mitigated by nitro-glycerin, $\frac{1}{100}$ grain, every hour or every second hour. There were no valvular lesions, but there was considerable hypertrophy of the heart; save during the paroxysms, the heart's action was apparently normal; during the paroxysms the pulse went in waves of alternate weakness and strength, the round being completed in about one minute. It would diminish steadily in strength until it was scarcely perceptible, then increase in strength as steadily until the summit of the wave was reached, and again recede. During the accession of strength he would doze off in a quiet sleep until the pulse began to recede, then begin to groan and gasp for breath until the recession was passed. This was after he began to take the nitro-glycerin; before that there was no remission, but a continuous struggle for breath until the paroxysm passed off. He was enabled to get perhaps two hours of quiet, free from distress of breathing, two or three times in twenty-four hours. The pneumonia passed off entirely in three or four days and gave no further trouble. He had an attack of pneumonia four years previous to his final illness, the dominant feature of which was distress of breathing. It passed through its stages regularly, the crisis occurring about the eighth day, and he made a rapid recovery, with no trace left behind in the lungs; but from that time the shortness of breath upon physical exertion increased, and he had occasional œdema of the ankles, sometimes extending for brief periods to the thighs. His final illness began October 28th, and he died February 15th following. No autopsy was made.

CASE IV.—S., a veteran, who had for several months been a prisoner in the rebel prison at Andersonville, Ga., and suffered from chronic diarrhœa and scurvy when there, the scurvy leaving chronic ulcers on his legs, which never healed; had never had rheumatism. He was taken suddenly with a most distressing paroxysm of dyspnœa on November 26, 1884, which was immediately followed with œdema of the legs and thighs. There were no valvular lesions, but there was considerable hypertrophy of the heart. The dyspnœa continued until about the middle of December following; in the mean time he was unable to lie down. The œdema nearly disappeared for a time, but it now occasionally returns. He has had occasional paroxysms of dyspnœa since then, but they are not so severe as the first ones.

CASE V.—D., aged about fifty, who had never been ill since childhood, was of robust health, and always had been a person of remarkable energy and physical endurance, consulted me in my office the last of April, 1885. He complained of shortness of breath and that he could not lie down at night. I found no valvular lesions, but hypertrophy of the heart, also slight enlargement of the left lobe of the liver and slight albuminuria. There were no casts or other evidence of disease of the kidneys. He consulted me in my office several times afterward; he had received no relief from treatment. The last time I saw him œdema of the legs had begun, and the enlargement of the liver had increased. I learned soon after that the anasarca shortly

became general and the paroxysms of dyspnœa had become very distressing, and that he had acute delirium. He soon after died. He lived eight miles away in the country.

CASE VI.—G., aged sixty-eight, who had never had rheumatism, and had always been healthy until quite recently, when he had observed an increasing shortness of breath, consulted me in my office February 12, 1886. I found considerable hypertrophy of the heart, but no valvular lesions. A few days afterward I was called to his house, and found him suffering from a very distressing paroxysm of dyspnœa and orthopnœa. General anasarca soon followed. His urine was loaded with sugar and had a specific gravity of 1.035, and he was voiding a very large quantity during the twenty-four hours. In the course of six weeks, under treatment, the sugar was very much diminished, also the quantity of urine voided during the twenty-four hours—the specific gravity was reduced to 1.018—but the paroxysms of dyspnœa continued with great severity, generally coming on in the night. He began to improve gradually along in the month of June following, and in the autumn was able to be out again. He has now partially regained his health, and was able to resume his duties as a commissioner of charity, which are very light, in the spring of 1887. He walks from his house to the office in the City Hall, about three hundred yards, but his steps are measured and his progression is slow. He still has paroxysms of dyspnœa coming on in the latter part of the night, waking him out of his sleep.

CASE VII.—M. C., aged sixty-four, was examined by me in 1879 for an increase of pension for disabilities resulting from chronic diarrhœa and disease of lungs. The pension for chronic diarrhœa had been discontinued because the disease had ceased. I found no disease of the lungs, but hypertrophy of the heart; no valvular lesions: the least physical exertion caused great difficulty of breathing; the skin was dusky and the lips became livid, indicating imperfect aeration. I diagnosticated the case as one of hypertrophy of the heart and dilatation of the left ventricle, probably due to disease of arteries. He failed to prove his claim, and was examined by me, by order of the pension office, several times before his death. There was no variation of physical or rational signs, save in degree—they became more pronounced. In February, 1885, Dr. Dewitt requested me to visit him in consultation. I found him confined to his bed with a large left popliteal aneurysm of the size of an orange, and a small one of the right popliteal artery of the size of a horse-chestnut. We discussed the propriety of tying the left femoral artery, but found both the femoral arteries rigid and unyielding, indicating extensive degeneration of the arteries, and we concluded that it was unsafe, as secondary hæmorrhage would be inevitable. He died in the early part of March following, from exhaustion. There was no autopsy made, which I have always regretted, as it would be interesting to know if the larger arteries were involved. In this case there were no sudden paroxysms of dyspnœa or general anasarca until a short time before his death.

I could multiply cases of heart disease not due to rheumatism almost indefinitely. Autopsies are rarely made, and many cases of sudden death are attributed to sudden heart-failure without suspecting grave heart lesions. A normal heart is not apt to stop suddenly its beating without adequate cause. Nature, in her beneficence, struggles long to compensate for the ravages of disease by increasing its power, but the time must come when it can do no more. Extensive degeneration of arteries is not rare, especially in the aged, but it takes place remote from the center of circulation, and the obstruction is comparatively slight.

ALBUMINURIA IN DIABETES MELLITUS.*

By HENRY C. COE, M. D.

My attention has been recently directed to this subject by observations made in a case of which the following is a brief history:

Mrs. B., aged forty, a large, fine-looking woman, came to the Polyclinic on February 11th complaining of backache and frequent micturition. Her general health was apparently perfect, and she herself stated that she had never been ill. The symptoms were readily explained by the presence of retroversion. The uterus was replaced, a pessary was inserted, and she went away feeling relieved. Four days later she sent for Dr. Hunter, and I saw her at his request. I found her sitting up, complaining of nausea and rather ill-defined pains in the lower part of the abdomen. The pulse was slow and full, the temperature a little over 99° F. Physical examination of the chest and abdomen was negative; vaginal examination the same. In order to be on the safe side, I removed the pessary, as her menstruation had just ceased. Ordered hot vaginal injections night and morning. She remarked incidentally that she was always very thirsty, and, on questioning her, I ascertained that she not only passed her urine frequently, but in considerable quantities. A specimen obtained on the following day had a specific gravity of 1.025, and contained one eighth of one per cent. of albumin by weight, and 3.8 grains of sugar to the ounce. Under the microscope a large number of granular casts of different calibers were visible.

I saw the patient on the 17th and found her in bed, breathing rapidly and complaining of pain under the right scapula. Percussion-sounds normal. On auscultation, I thought that I detected a friction-sound over the right base. Heart-sounds normal. Pulse and temperature normal. Tongue red and dry. The abdominal pain had disappeared. On telling her that I had found sugar in her urine, the patient admitted that she had been told four or five years before that she had diabetes, and had been placed on restricted diet, but, as she always felt well, she had forgotten all about the matter, being merely annoyed by the thirst and frequent micturition. Since my former visit she had become very restless, and could not sleep. I regulated her diet, and prescribed a simple sedative. During the two following days her symptoms disappeared, and she was up and about, so that I ceased my visits, telling her to call at the office in a few days with another specimen of her urine. On the 21st, three days later, she sent for Dr. Hunter in great haste. He found her in bed, presenting no definite symptoms, except insomnia and restlessness. Pulse and temperature normal. On the 25th I was sent for, and found her breathing rapidly, but without dyspnoea. She was extremely restless, and could not sleep. Tongue and throat dry and red. She had no pain, and the physical examination of the thorax and abdomen was negative. Although she took plenty of nourishment, she complained of feeling very weak. She was perfectly unmanageable, having drunk two or three quarts of claret during the preceding day and night, besides an enormous quantity of Vichy. I took away from her a bottle of brandy, of which she was partaking freely, so that the mental dullness which I noted was doubtless due partly to the alcohol. I saw her again on the following day at 11.30 A. M., and found her condition much more alarming. The pulse was weak, but not rapid; the respirations were rapid and shallow. Temperature normal. The eyes presented a peculiar staring expression, the pupils being dilated. Mind perfectly clear. Slight dullness over both bases, with moist râles. I

gave an unfavorable prognosis, but did not anticipate an immediate termination of the case. The patient expired suddenly (apparently of heart-failure) about an hour after I left her, without losing consciousness. During the twenty-four hours preceding her death she passed about 20,000 c. c. of urine, having a specific gravity of 1.010. It contained a trace of albumin, twenty grammes of urea in all, and 5.17 grains of sugar to the ounce. Not having the reagents at hand, I unfortunately did not test for acetone and diacetic acid. Casts were present, as at the first examination, but they were less numerous.

Although the patient was under observation for such a short time and her urine was examined only twice, I felt justified in assuming from the first that organic disease of the kidney was present, and therefore that the prognosis was grave, even though her general condition was not such as to awaken apprehension until just before her death. The closing phenomena strongly suggested the presence of a toxic element. I think that uræmia could be excluded, because a careful quantitative analysis showed only a moderate diminution in the relative amount of urea excreted. I believe that they were due to acetonæmia, and regret exceedingly that I did not confirm this opinion by the proper tests.

Since observing this case I have noted reports of two somewhat similar ones, which seem to bear on the point which I wish to make—that the glycosuria precedes the renal affection.

CASE I.—Dr. Alonzo Clark presented to the New York Pathological Society in 1862 (*"Am. Med. Times,"* March 29, 1862) the fatty kidneys removed from a child, who, after suffering for a year from diabetes, had an acute attack of uræmia, accompanied with marked œdema. The specific gravity of the urine before the attack was 1.036; at the time of the same, 1.020; it contained sugar, albumin, and granular casts. There were no complications in other organs, and the patient died in coma.

CASE II.—The late Dr. W. M. Carpenter reported, under the heading "A Clinical Note on Albuminuria and Glycosuria" (*"Med. Record,"* Feb. 6, 1886), the case of a woman, aged fifty-five, who had for the space of a year passed a large quantity of urine. The sudden appearance of œdema and dyspnoea led her attendant to examine the urine, which contained a considerable amount of albumin and numerous casts, the specific gravity being 1.010. A week later the albumin and casts disappeared entirely, and the urine remained apparently normal for three months, when it was found to contain sugar. For two years the case pursued the ordinary course of diabetes mellitus. The subsequent history is not given.

The latter writer advances the opinion that the glycosuria must have preceded the albuminuria, and that the patient undoubtedly had advanced renal disease.

As this is intended simply as a brief clinical report, I shall not enter into an exhaustive consideration of the pathology, and shall only glance at the rather scanty literature to which I have had access. It is commonly stated in text-books on medicine that the presence of albumin in diabetic urine should be regarded as a serious indication. Personally I have several times detected it in the urine of diabetic patients who were in good general condition, and were responding well to restricted diet. Its appearance was occasional, and it did not seem to bear any definite relation to

* Read before the New York Clinical Society, May 25, 1888.

the patient's health or to the quantity of sugar. Casts were never found in these cases of intermittent albuminuria. It seems to me that the subject may be simplified by regarding albuminuria, when complicating glycosuria, as of serious import only when it is accompanied by other evidences of organic disease of the kidneys.

This is a point on which sufficient stress is not always laid. Thus Roberts ("Urinary and Renal Diseases," p. 232) believes that "the presence of a small quantity of albumin . . . constitutes an untoward sign." Harley ("Diabetes," p. 64) agrees with him. Niemeyer ("Text-book of Practical Medicine," vol. ii, p. 778) is equally pessimistic, affirming: "Now and then albuminuria is associated with mellituria, thereby augmenting the exhaustion and accelerating the demise of the sufferer." Loomis ("Practical Medicine," p. 879) states that the presence of albumin "does not necessarily indicate that there are grave kidney changes in diabetic subjects." Flint ("Principles and Practice of Medicine," p. 928) is equally cautious, affirming that albuminuria "shows either the existence of coincident renal disease or those conditions which, under other circumstances, give rise to the presence of albumin in the urine." The latter alternative should not be forgotten, especially in the case of females, a trace of albumin in whose urine is often referable to transient inflammation of the mucosa of the genito-urinary tract, perhaps not noted by the patient herself. In a case of diabetes now under observation the patient returned from a long and fatiguing journey a week ago, and when I examined a specimen of her urine, passed on the following day, I found, in addition to a considerable increase in the amount of sugar (four and a half per cent.), one fiftieth of one per cent., by weight, of albumin. I naturally inferred that the presence of the latter was of evil import, since I had not observed it in former specimens of the same urine, but under the microscope numerous leucocytes were shown, while no casts could be found after a careful search. This is a small point, but it is of some interest, because as a rule practitioners who content themselves with chemical examinations of the urine are apt to be unnecessarily alarmed (and may alarm their patients, which is still more important) on finding albumin in the urine, especially if it also contains sugar. When the sources of error are so evident it is difficult to understand how Jaccoud ("Nouveau dict. de méd. et de chir. pratiques," vol. ii, art. "Diabète sucré") can affirm so positively that "albuminuria in the course of diabetes is a very serious accident, which denotes the addition of a grave complication to the original malady."

There is general unanimity among recent authorities as to the pathology of albuminuria in diabetes. That anatomical changes are frequently found in the kidneys is unquestioned. Straus ("Arch. de phys. norm. et path.," xvii, 1885; "Contributions à l'étude des lésions hist. du rein dans le diabète sucré") found glycogenous material deposited mainly in the epithelium of the straight tubes of Henle. Ehrlich and Frerichs agree with him; Ebstein, on the other hand, regards the process rather as a coagulation-necrosis. Blau (Schmidt's "Jahrbücher," 1887, p. 209, "Ueber Diabetes Mellitus") is inclined to doubt the direct

connection between these changes and the presence of albumin in the urine. Stokvis believes that albuminuria is due not simply to renal irritation from long-continued polyuria, but to actual changes in the kidney, ranging in severity from cloudy swelling to advanced degeneration. Albuminuria, he says very properly, is due less to glycogenous infiltration of the epithelia than to distinct changes in the glomeruli, resulting from the circulation through them of diseased blood. This was demonstrated experimentally by Albertoni and Pisenti ("Das Aceton in Bezug auf die Nierenveränderungen beim Diabetes," "Centralblatt für die med. Wiss.," Aug. 8, 1885), who found that when acetone was administered to dogs and rabbits albuminuria resulted, and that, if the experiment was continued for some time, the epithelium of Henle's tubes underwent exactly the same changes as those described by Ebstein and other observers in the kidneys of diabetic patients dying in coma in whose urine acetone was found. They give to this condition the appropriate name *albuminuria*, or *nephritis, acetonica*, and conclude that acetone is excreted, not by the glomeruli, but by the epithelium, the same as urea. When grape-sugar is injected into the veins of animals glycosuria results, and subsequently albuminuria also. It is a curious fact in experimental pathology that there exists a spot in the fourth ventricle, near the sugar-center, puncture of which causes albumin to appear in the urine (Bernard). Griesinger ("Studien über Diabetes," "Arch. der phys. Heilkunde," 1859) found the kidneys affected in thirty-two out of sixty-four diabetic patients whose bodies he examined, fatty degeneration being noted in seventeen. Contracted kidney was not observed. Maguire, on the other hand ("Brit. Med. Jour.," Sept. 18, 1886, p. 543), found the kidneys in old cases of diabetes hard and atrophic, due to an overgrowth of the connective tissue around the vessels and glomeruli and between the tubes; this condition he ascribes to long-continued irritation, and does not regard it as true interstitial nephritis. Jaccoud (*loc. cit.*) admits that the changes in the tubular epithelium resulting from glycosuria are "in many cases the starting-point of true Bright's disease." This summarizes the statement already quoted with reference to the pathological anatomy, so that we need not dwell upon it further.

With regard to the frequency of albuminuria in diabetics I need only to quote the observations of Schmitz ("Deutsche med. Wochenschrift," 1881, Nos. 48-51), who in six hundred cases of diabetes found albumin in about two tenths of one per cent. It was often increased after severe bodily exertion. It is worth noting that with his enormous experience this writer states that he has usually found the specific gravity of the urine to vary between 1.025 and 1.035; he never examined a specimen the specific gravity of which was above 1.042 (!).

I have referred to the albuminuria as being transient or permanent; it may also be characterized as acute and chronic. The transient form sometimes alternates with glycosuria, the albumin increasing in amount as the sugar diminishes, so that they are inversely proportional. Of course in the later stages of diabetes albumin may be due to deficient circulation. Bäumlér ("Centralblatt für klin. Med.," 1886, No. 25) calls attention to the appearance of

albumin in the urine of diabetics who have suddenly developed carbuncle or erysipelas. He regards the condition as "infectious nephritis." Acute albuminuria is sometimes observed in cases of diabetic coma; the relations which it bears to acetoneuria have been referred to. When we seek to find the true proportion of cases of diabetes in which albuminuria is due to actual organic disease of the kidney, we meet with considerable difference of opinion. Thus, Ewald ("Real Encyclopädie der ges. Heilkunde," article "Diabetes"), while he finds that between ten and fifteen per cent. of diabetic patients have albumin in the urine, agrees with Senator that "true nephritis is the cause of the albuminuria of diabetics in very exceptional cases." Other observers, as we have seen, believe that Bright's disease develops not infrequently. Stokvis ("Centralblatt für klin. Med.," 1886, No. 25) divides these cases of persistent albuminuria into two classes. In one there is only a small quantity of albumin, which may increase after the disappearance of sugar from the urine, but subsequently disappears, no casts being found; here there are no organic changes in the kidneys. The second class includes cases in which a considerable amount of albumin appears constantly in the urine, and persists after the disappearance of sugar, being accompanied by casts. In one third of these the usual symptoms of chronic nephritis develop. There is little to add regarding the additional symptoms presented by diabetic patients with this complication. It is usually so insidious in its development as to escape the attention of the attendant who is not on the look-out for it. Increasing dyspnoea (in the absence of phthisis), weakness, and circulatory disturbances ought to awaken suspicion and lead to repeated and careful examinations of the urine for albumin and casts. Of course when œdema appears after disappearance of the sugar, there can be little doubt.

The prognosis should always be guarded, and should be based on the result of the urinary examination quite as much as on the general condition of the patient. In the case reported, the presence of numerous casts led me to take a serious view of it, when there was apparently no other cause for alarm. In my opinion, the *persistence* of the albumin and casts in glycosuria is the most important element. But there are other tests which ought not to be omitted—those for acetone and diacetic acid, since the presence of these substances in diabetic urine, in addition to albumin and casts, makes the prognosis extremely grave; this combination renders the patient liable at any moment to a sudden and fatal attack, which may take the form of heart failure, as in my case, or may assume the more prolonged convulsive type. That, in any case, uræmia is not the true explanation of this phenomenon is now pretty generally agreed.

No special change in the ordinary diabetic treatment is indicated on the discovery of a probable renal complication. Stokvis advises free catharsis with salines, and the cautious use of cardiac tonics. Heart-failure should be especially guarded against.

We may, then, summarize as follows:

1. Albuminuria occurring in diabetes has the same import as in ordinary cases.

2. A trace of albumin, appearing transiently or intermittently (when proved by exclusion to be of renal origin), and seldom or never associated with casts, may be regarded as due to irritation of the kidneys from the glycosuria. The immediate prognosis is good; but renal changes may subsequently result.

3. The occurrence of persistent albuminuria and numerous casts in a case of diabetes of long standing is of grave import, as pointing to the existence of chronic nephritis; if acetone and diacetic acid are also present, the patient may die in coma at any time.

4. Examination of the urine furnishes complete evidence of the patient's danger, even when the general condition is not such as to excite apprehension.

TWO CASES OF ECTOPIC GESTATION.*

By W. D. HAMILTON, M.D.,
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THE subject of extra-uterine gestation possesses great interest for the practitioner of medicine. A desperate anomaly, usually insidious in its development, often fatal in its outcome, it challenges the attention of every thoughtful medical man. Of its pathology much has been written. Its causation and the conditions predisposing to it have given rise to much comment. The present tendency is toward simplification. Whereas it was formally considered under a tenfold classification, there are now those who assume that all varieties of it are originally tubal. Tait, Thomas, and other eminent gynæcologists entertain this view, and the impression is gaining ground among those who are giving the subject attention that such is the case. Parry cites three subdivisions—tubal, ovarian, and abdominal. Tait, whose large experience would seem to justify him in generalizing, maintains that all ectopic gestations are at first tubal, and that other forms date their peculiar character from the time of rupture of the tube and escape of the ovum. Interstitial pregnancy, then, means fecundation in the uterine end of the tube, while the ovarian probably traces its origin to the fimbriated extremity as the site of impregnation. "If," says Greig Smith, "rupture occurs on the *under* surface of the tube, where it is embraced by the broad ligaments, the ovum may develop in the inclosed cellular tissue and be extraperitoneal. If it takes place on the *free* surface of the tube, the ovum escapes into the abdominal cavity and may develop there." Unfortunately, there is great dissimilarity in the histories of these cases. Frequently all goes well until the woman is suddenly collapsed, and again it happens that men who have had abundant opportunity to study the symptoms have erred in diagnosis. Such mistakes are not so common now as formerly. Furthermore, the experience of the past few years has thrown much light upon the recognition and treatment of this condition.

Authors agree that anything serving to interfere with the progress of the ovule through the tube favors the occurrence

* Read before the Ohio State Medical Society at its fifty-third annual meeting.

of ectopic gestation. Women who have been sterile for several years are more liable to anomalous conception than others. Catarrhal salpingitis or actual occlusion of the oviduct predisposes to its occurrence. Certain congenital malformations of the internal genitalia might also be cited as contributing a proportion of the cases. Undoubtedly a great deal remains to be learned in this connection, and if the conjectural part of our literature were eliminated, the quantity of it would suffer greatly.

As for the modes of treatment which are worthy of consideration, practically only two are to be mentioned: 1. The employment of electricity to kill the fœtus, in the hope that nature will either cause the absorption of that which remains, or will accomplish its expulsion in some way or other. 2. Some form of cutting operation, having for its object the extraction of the products of conception through the wound thus inflicted. The first method is adapted to the early weeks of gestation, while the second is broadly applicable to the whole period during which the child, placenta, or portions of either, are carried by the mother. The brilliant operations of Mr. Tait tend to re-enforce the remark of Mr. Greig Smith, that "a dispassionate consideration of the natural terminations of the disease and of the effects of minor modes of treatment (electricity being the chief one) almost drives one to the conclusion that in all stages and under all circumstances abdominal section is the best treatment." From this it appears that abdominal section is not urged by him as a *last resort*, but as a mode of treatment.

CASE I.—Mrs. E. S., aged thirty-one, married fourteen years, the mother of five children, the youngest three years old. Family history good. Two years ago she miscarried. Has been regularly unwell all her menstrual life until the middle of last June (1887), when she menstruated normally; every month following, at least once and sometimes twice, there was a discharge of blood from the vagina which never exceeded twenty-four hours in duration. In January, a few days after I first saw her, menstruation occurred and lasted a week. Just after its cessation she fell in her door-yard, and within a day or two was obliged to go to bed on account of fever and pain, which persisted for ten days. During this interval there were occasional chills; the average pulse was 90; the maximum temperature was 103° F. About August 10th there were several attacks of very severe pain in the abdomen, principally in the left side, lasting an hour or two and leaving intense soreness for several days. The physician in attendance supposed that it was renal colic. She walked in a stooping posture after each of these paroxysms. That which came from the vagina at such times looked like coffee-grounds, and probably consisted of small clots expelled by the uterus. The presumption is that rupture of the lower side of the tube took place during one of these painful experiences. On December 10th a discharge of water proceeded from the vagina and continued for some weeks. Varying in amount, it was at first colorless, afterward became offensive, and resembled blood more or less decomposed. Her general health was fair until the time of her fall, after which premature and spurious labor occurred, terminating toward the latter part of January with the death of the child. In the words of the patient, "I felt a twisting as if something was crowded up there and trying to pull itself loose." This, perhaps the death struggle of the child, occupied about two minutes. She was seen by the writer with Dr. Turney, of this city, on the following morning, February

1st. A peculiar sallow appearance gave her an ill-conditioned look. The abdominal tenderness was extreme and the enlargement had undergone a striking diminution since the first examination five weeks before. Temperature, 101°; pulse, 96. A lobulated, irregular, doughy mass filled the lower left part of the belly. The right side of the abdomen was not greatly encroached upon. Vaginal examination found the softened cervix rather inaccessible, it being behind and slightly to the right of the symphysis pubis. The uterus, about five inches long, could be clearly outlined in an oblique, right, lower, anterior relation to the tumor. A large boggy mass completely filled the *cul-de-sac*. On inspection in the knee-chest position, the vagina looked purplish and vascular, and a detached shred of supposed deciduous membrane was seen. She entered Mount Carmel Hospital on the same day. On February 8d, in the presence of several visiting physicians and the students of Columbus Medical College, abdominal section was performed. The adventitious womb was spherical in shape, very vascular, and looked like a fibroid. Having made an incision into it large enough to admit the finger, the diagnosis was promptly confirmed and a fœtus of seven and a half months was soon extracted through the enlarged opening. The walls of the new womb were thick and succulent. The placenta lay toward the left hypochondrium and was allowed to remain undisturbed. Thorough irrigation was employed, the peritoneal cavity shut off by silk stitches, the cord left protruding, inside and outside drains were inserted, and the operation was thus completed. Neither shock nor hæmorrhage was present in any degree. The temperature and pulse were practically normal throughout. Daily carbolyzed washing was used. The placenta was removed four weeks later, after which the opening would barely admit the finger, so completely had contraction taken place. She has been in perfect health ever since and has gained twenty pounds. Examination reveals nothing abnormal but a three-inch cicatrix. The case was clearly one of the ligamentous variety of ectopic gestation, having been primarily tubal.

CASE II.—Mrs. W. T. F. was seen April 28th, with Dr. W. W. Carter, of Newark, and Dr. McCann, of Perryton. Twenty-eight years old, married six years, two children, youngest four years old. No miscarriages. For three years past a free leucorrhœal discharge had existed. In December, 1887, and January, 1888, faulty menstruation occurred. In February, at what should have been the time for the catamenial flow, the patient was taken suddenly ill with vomiting, and pains through the back, hips, and pelvis. She improved within a few days so as to be able to go out driving. Only a short time elapsed, however, when another violent attack of pelvic pain occurred, from which she was slow in rallying.

April 4th.—Temperature 103°, pulse 120; complained of constant pain in region of left ovary, where palpation elicited deep-seated tenderness. No suspicion of the exact nature of the disease was entertained until April 15th, when she passed, by the rectum, the pelvic bones and lower extremities of a fœtus, and two days later the left arm and a rib were seen; within a short time the other arm, a scapula, four ribs, and both clavicles were extruded.

She was first seen by the writer April 29th, when examination *per vaginam* showed the uterus to be somewhat fixed and crowded slightly to the right. A lump as large as a goose-egg occupied the *cul-de-sac* and groin, being formed by the head and placenta in their proper tubal investment. The finger, three inches and a half within the rectum, found a hole as large as a half-dollar on the right latero-anterior aspect of the rectum and extending through its wall. Nothing loose could be discerned. In view of the uncertainty of Nature's efforts, she was advised to enter the hospital, so that if at any time it became necessary

to interfere, it could be promptly done. She declined to leave her home, however, and, hoping that spontaneous discharge of the parts remaining would soon occur, waited for further developments. The bones of the head and face followed within a week of this examination. The fever temporarily abated. After May 5th no more osseous structures came away. Fever persisted for several weeks, however, and finally, on May 15th, a mass, including one ounce of placental tissue and eight ounces of clots, was similarly expelled. In the next three weeks this was repeated on two different occasions. After the hæmorrhages she was always much exhausted. Some transient febrile reaction occurred each time. The temperature invariably rebounded, reaching a maximum of 104.8° . There was progressive loss of flesh and strength after the first discharge of bones. She died of septicæmia and exhaustion, Friday, June 8th. Unfortunately, no autopsy was held. The specimens here presented are apparently the bones of a fœtus at about four and a half or five months. After its death took place, adhesive inflammation of the gravid tube to the rectum occurred, which was in turn followed by ulceration of the tube and bowel. In this case Nature made the diagnosis and devised the treatment, her method being so slow and exhausting the patient so greatly that death resulted.

Of the two cases which form the subject of this paper, the first bears upon Tait's theory that all ectopic conceptions are primarily tubal, and emphasizes what successes elsewhere are frequently demonstrating to-day that abdominal section is a *pre-eminently conservative and practical* mode of treatment for this condition, while the second case shows clearly that Nature can not always be relied on to expel the products of conception, even though she makes an apparently good beginning in this direction.

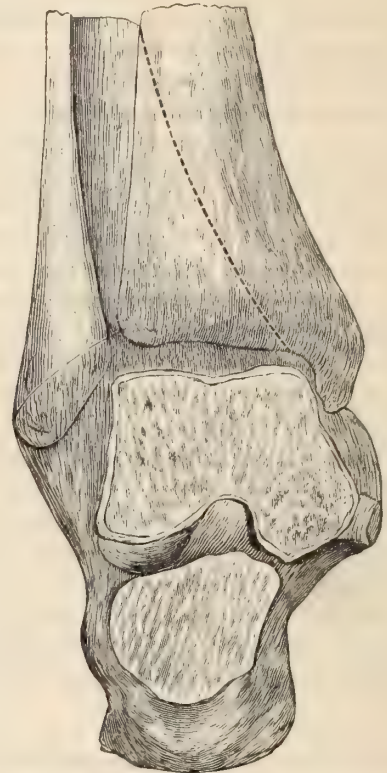
COMPOUND DISLOCATION OF THE TIBIA AND FIBULA AT THE RIGHT ANKLE; ALSO COMPOUND FRACTURE OF THE LEFT FOOT.*

By J. E. PRICHARD, M.D.,
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L. D., aged twenty-seven, married, a resident of Philadelphia, employed as wharf-builder, was assisting in the erection of a pile-driver. The derrick was fifty-two feet high, and the hammer, which weighed one thousand eight hundred pounds, was being adjusted to its place; it lay on the ground thirty feet from the derrick. Ropes were run from the top in different directions to keep it in an upright position. D. was on the upper staging forty-eight feet from the ground. Two of the guys were too short, and as soon as the engine was started for the purpose of raising the hammer the derrick fell. When he found the derrick was falling, he jumped as far as he could away from it, and struck the ground about one foot from a pile of lumber. The derrick fell within two feet of him. He was in his stocking feet at the time. The ground was a mixture of clay and gravel hardened by the sun, and as inelastic as a rock.

About four o'clock, p. m., August 15, 1878, I was called to see him at his boarding-house. I found him in bed suffering greatly from the shock. He would not go to the hospital. I found a double compound dislocation of both tibia and fibula of the right ankle lacerating the annular ligament, I think splitting obliquely the tarsal surface of the tibia, or the surface which

articulates with the astragalus, and driving the astragalus between the two bones of the leg. The ends of the fibula and tibia were driven through the soft tissues. The internal malleolus was covered with clay and gravel. The fibula did not extend quite so far. The joint was greatly distended and swollen; the foot was held firm and immovable.



The dotted line indicates the supposed line of fracture.

The left foot had sustained a compound compacted fracture of the os calcis, the os scaphoides, and a cuneiform bone; all three were injured and driven out through the sole of the foot. It presented a very distorted appearance. After making a careful examination of the lesion I anæsthetized the patient, and commenced with the right ankle by placing a strap, by half-hitches, on the foot, and a perineal belt for counter-traction. Then I placed two men at the foot and two others at the perineal belt, and directed them how to pull gradually and increase the pressure until the rigidity of the muscles could be overcome. It required considerable force to reduce the dislocation, but at last it yielded and the bones came back with a snap, leaving a large ragged wound under each malleolus and being followed by considerable hæmorrhage from the posterior tibial artery, which was ligated, and the wound closed with sutures and dressed with lint moistened with twenty drops of carbolic acid to an ounce of glycerin. The laceration under the external malleolus was an inch and three fourths in length and that under the internal three inches. We applied counter-extension by a strap to the foot and a perineal belt. This was continued for forty-eight hours.

The left foot was not so easily reduced. It was found necessary to remove a number of fragments of the crushed cuneiform and scaphoid bones before the foot could be manipulated into anything like a normal shape. After long manipulation, pushing back the cuneiform bone, it was necessary to remove some of the fragments entire. After all of the fragments were removed the foot was molded back to normal shape, leaving a gaping ragged laceration in or near the center of the sole, three inches and a half long and two inches wide.

* Read before the Baltimore Medical and Surgical Society, April 25, 1888.

Owing to the solution of continuity of both the soft and osseous tissues, it would not retain its normal shape. I therefore applied a splint, similar to the Dupuytren, by means of which the proper extension could be maintained. The first splint gave us some trouble by pressing on the external malleolus and produced a small abscess. This was soon remedied by removing the pressure. The dressing consisted of carbolized oil with lint and a bandage, also irrigation by carbolized water, 30 mm. of carbolic acid to one quart of water. The injury was dressed every twenty-four hours. About September 1st the nurse became careless and slept one night, allowing the irrigating fountain to run dry. On my visit next day all the dressing was dry, and the foot was very hot and much inflamed, showing strong symptoms of cellulitis. Destructive inflammation supervened and considerable pus was discharged. The wound was syringed out and cleaned daily with carbolized water, and filled with lint saturated with carbolized glycerin. On September 8th, eighteen days after the injury, another large piece of bone worked itself loose. I think it was part of the os calcis, half an inch by three fourths of an inch; altogether, twenty-five fragments of bone were removed from the foot.

The treatment was antiseptic through the whole course of the case. After using the carbolic-acid mixture for two weeks I changed the dressing, as I was afraid a toxic effect might be produced.

Dry calomel and lint with bandages were substituted. The wound improved faster by the change. In five days I changed back to the carbolic acid again.

About the 10th and 12th of September erysipelas (traumatic) made its appearance. A solution of chloride of ammonium was applied, which relieved the itching, and the inflammation soon disappeared.

About the same time the patient had an attack of malarial or remittent fever which was treated in the usual way—viz., with quinine gr. iij, powdered capsicum gr. j, every three hours; and bromide of potassium in gr. xv doses every five hours.

All the wounds healed kindly. The dislocation gave no trouble after the first week.

October 20th.—The patient put on his shoes and walked out with me half a mile.

November 8th.—He left for his home in Philadelphia. By that time he was able to walk with ease and could bear his full weight on his foot.

In January, 1879, he wrote to me saying that he had been sick with fever, but his feet were quite well. He had no trouble with his foot now, and could go about without the use of a cane. I heard again the last time in 1882. He then could walk without any lameness.

A CASE OF UTERINE HYDATIDS.*

By JAMES P. MARSH, M. D.,

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AMONG the more uncommon anomalies of pregnancy there are few which, as regards their diagnosis, are more obscure than that of uterine hydatids. Authors who have written upon this subject have mentioned the expulsion of cysts as being pathognomonic, but a very superficial investigation of the literature of the subject has confirmed an opinion, which I had previously held, that the expulsion of separate cysts at irregular intervals during the period of

gestation is the exception and not the rule. As the following case was faulty in diagnosis but most opportune and successful in its treatment, it was thought that it might not be uninteresting to briefly relate its salient points, leaving the theoretical consideration of the subject for some future gathering.

The patient in question was a young woman twenty-four years of age. She began to menstruate at fifteen, and before marriage had always been regular. Her sickness usually lasted from three to four days, being accompanied with the loss of an average quantity of blood and but little or no pain. Previous to her present illness her general health had been excellent. When I first saw her she had been married about four months. She menstruated once a few weeks after marriage, and then menstruation ceased, a vomiting of a most distressing and persistent character supervening. This condition obtained until she was, as she thought, about two months advanced in pregnancy, when she fell and went through what appeared to be a miscarriage. However, from this time on she steadily emaciated, the vomiting became almost uncontrollable, and the abdomen enlarged rapidly. She felt no signs of life, but occasionally there occurred a slight hæmorrhage from the genitalia. The foregoing facts were ascertained from the patient and her friends, and it was at this stage that the case came under my observation:

March 19, 1888.—The patient is of slight frame and build, and is very weak and emaciated. She vomits everything that she takes into the stomach, and is very anæmic. She suffers intense paroxysmal pains, running from side to side through the lower abdomen. There are no symptoms or signs pointing to disease in other parts than the sexual apparatus. On palpation and inspection, I find externally a tumor extending from the symphysis to the umbilicus, and very decidedly to the left of the median line. It has the shape and form of the uterus at about the sixth month; however, it does not feel so dense as that organ, and there is an indistinct sense of fluctuation through it. It has also a shallow line of constriction running down its central meridian. It is movable, and on the left side very painful to pressure. No fetal heart-sounds can be heard. Internally I find the cervix very dense and long, the external os being firmly contracted. The tumor, noticed externally, seems to be the uterus, but to the left and posteriorly the limiting walls are very thin, and it seems as if in this region there could be obtained a faint ballotement.

I considered the exclusion to rest between uterine pregnancy with placenta prævia, extra-uterine gestation, and pelvic tumor. Tumors other than those arising from pregnancy were readily excluded; but the differentiation between intra-uterine and extra-uterine gestation was impossible without sounding. As the patient was in a very anæmic and emaciated condition, and as I inclined to the opinion that I had to deal with an extra-uterine pregnancy of the interstitial variety, I advised an exploration of the uterine cavity. From ecclesiastical reasons this was refused by the family.

I did not see the patient again until the evening of the 20th, when I was hastily summoned on account of an alarming hæmorrhage, which had taken place about an hour and a half previously. I found the patient exsanguinated, with a rapid pulse, yawning, and great restlessness. On digital examination, the external os was found firmly contracted, and it was also plain that there were no uterine contractions. I removed a mass of clots from the vagina and tamponed, leaving fluid extract of ergot and morphine to be given during the night. In all the blood which came from the patient during this hæmorrhage

* Read before the Second District Branch of the New York State Medical Association, June 26, 1888.

there were no cysts, as I examined it carefully. The next morning at 11 o'clock the patient began to bleed slightly, and the pulse ran up to 145, with extreme restlessness and weakness. I now insisted upon an exploration of the uterine cavity. The patient was placed crosswise of the bed, the buttocks being brought to the edge of the same. I then washed out the vagina with a solution of mercuric bichloride (1 to 1,000). The sound indicated that I had to deal with an intra-uterine condition. The os was low in the pelvis and firmly contracted, but, by prolonged and persistent efforts with the fingers, I succeeded in dilating it sufficiently to introduce three fingers as far as the second phalangeal articulation. The hæmorrhage now became quite severe and my hand came in contact with a mass which felt somewhat like placental tissue. Gradually, by holding the womb well down in the pelvis by means of the right hand placed externally and by introducing the whole of the left hand into the vagina, I succeeded in passing the fingers of the engaged hand through the entire mass in the uterus, thus satisfying myself of the absence of a fœtus. As I withdrew my hand it was followed by a mass of chorionic hydatids and the diagnosis became apparent. As soon as the mass had been penetrated and broken up all hæmorrhage ceased. I now introduced Thomas's dull curette, first having dipped it in pure phenol, and thoroughly emptied the uterine cavity. I think that in this way I must have removed nearly three pints of cysts of various sizes. The uterine walls were exceedingly thin; so much so that by placing the hand on the abdominal walls I could feel the shape of the curette when applied to the fundus. As the growth was broken up and removed, the uterus contracted down without any hesitancy. After curetting as thoroughly as was deemed prudent, the uterine cavity was washed out with a solution of carbolic acid (1 to 40) and the obstetric toilet completed as has been described by me in an article published in the "New York Medical Journal" for November 26, 1887.

22d.—The patient is resting very comfortably, has considerable thirst, and vomited once after drinking milk. Pulse 138, temperature 98.5° F.

23d, 9.30 A. M.—Has passed a sleepless night, and had a slight chill this morning. Has had three offensive stools. There is some headache, but no abdominal tenderness. Pulse 136, temperature 101.5°. Whisky, quinine, and rest were prescribed.

12 Noon.—More comfortable, with less headache. Urination not painful. Pulse 120, temperature 98.5°. A vaginal douche of solution of mercuric bichloride (1 to 2,000) was given, followed by boiled water.

24th, 10 A. M.—She slept well last night, and is bright and cheerful this morning, with a slight tendency toward a return of appetite. There is no abdominal tenderness. Pulse 126, temperature 102°. Vaginal douche of mercuric bichloride.

5 P. M.—Very comfortable. Pulse 120, temperature 101°.

25th.—Slept well all night, and took a substantial breakfast this morning. There is but little vaginal discharge, and no odor to it. Pulse 120, temperature 98.5°. Iron tonic. From this time the convalescence became fully established, and she resumed her household duties about two weeks from the time of the operation.

I would call attention to the rigid, contracted condition of the external os in this case as being an exception to the rule of Goodell that, "when the cervix is as soft as one's lips, the woman is probably pregnant; when it is as hard as the tip of one's nose, the womb is more likely empty."*

It is also noteworthy that, had due attention been paid to the discrepancy between the probable length of the gestation and the size of the uterus, I might have been led to a line of evidence which would have resulted in an accurate diagnosis. Again, most authors mention the absence of ballottement as a point of negative evidence of great value in diagnosing this condition, but I can assure you that, in a uterus widely distended by hydatid cysts, there is an impulse transmitted to the finger wonderfully like ballottement.

The several symptoms, when taken together, were very misleading. The supposed labor, the side-to-side pains, the lengthened cervix, the localized tenderness on the left side, the tenuity of the limiting walls—all pointed to extra-uterine pregnancy, and I have little doubt that, had this patient fallen into the hands of an enthusiastic laparotomist, a needless and useless operation would have been performed. As Hamlet said of the state of Denmark, so can it be said of much of the abdominal surgery of the present day. I hope to see the day in which a more humane profession will permit those of their fellow-beings who are destined for death to pass away in peace, undisturbed by surgeons' knives or antiseptic solutions.

It may, with a considerable show of justice, be asserted that the method of treatment followed in this case was not exactly orthodox. It might be urged that I could have more properly resorted to Barnes's dilators for dilatation instead of using my fingers; and there are those who would have urged an expectant treatment. Had I used any mechanical method of dilatation, I feel confident that my patient would have bled to death. I wish to particularly emphasize the fact that the hæmorrhage was very sharp from the time of dilatation until I had thoroughly broken up the hydatid mass, and, furthermore, that the hand acts as a most admirable tampon to the cervix while the fingers are engaged in the uterine cavity. Hence I am led to urge that for the removal of large masses of hydatids from the uterus there is no means so applicable as the hand and fingers; but when, however, the mass has been broken up and hæmorrhage in a measure controlled, I would insist upon the utility of Thomas's curette. Nevertheless, I think the use of this instrument fraught with great danger to the uterine walls. Indeed, so great is the liability of their perforation that the operation should not be undertaken by one who has not had an extended acquaintance with this instrument and its application in ordinary obstetric and gynecological cases.

My patient was reduced to an extreme condition by reasons ecclesiastic, and, although not germane to the subject, I would call attention to the fact that, while we are picking bones with each other as to whether electricity or laparotomy shall be resorted to in the early stages of ectopic gestation, neither of these methods will be open, by reason of ecclesiastical prohibition, to a large contingent of our patients. At no distant time the teachings of obstetric surgery must clash with theological dogma, and, as obstetric surgeons, we must be prepared to place the matter squarely and completely before the State tribunals, that the odium of public and legal opinion may not be directed against our

* William Goodell, "Lessons in Gynecology," Philadelphia, 1887, p. 26.

honorable profession. As Christians by reason of our dwelling in a Christian country, and as gentlemen by reason of our high calling, we are bound by all that is honorable to respect the religious convictions of our patients; but, if those convictions result in the death of our patients by reason of their relatives and friends refusing the operative measures which we offer, are we or are we not responsible under the law of the land?

Correspondence.

LETTER FROM VIENNA.

A Case of Hemianopsia Superior.—The Treatment of Whooping-cough by Nasal Insufflations and by the Internal Use of Antipyrine.—Osteotomy for the Correction of Genu Valgum.—A Gunshot Wound of the Brain followed by Recovery.

VIENNA, June 29, 1888.

PROFESSOR NOTHNAGEL brought forward before a recent meeting of the Imperial Royal Society of Physicians of Vienna a very interesting case of sudden blindness. It had a special physiological interest, and its history was short. The patient, a tailor, stated that he had always been in good health, except for occasional temporary headache. Some weeks before, he had suddenly lost his power of sight; but he was not able to tell under what particular conditions this had occurred, as his intellectual faculties were somewhat impaired. The ophthalmoscopic examination showed quite normal conditions present. The pupils of the two eyes differed in size, and did not react promptly or fully to changes of light. On further examination of the patient, it became evident that he was not totally blind, but that he presented the symptoms of so-called hemianopsia superior, only the upper part of the field of vision being affected. When he lay in his bed and wished to see the objects which were presented to him, he tried to get them into the lower part of the field of vision by bending his head backward and lifting his eyes upward. With this lower part of the field of vision he could distinguish only red and white colors. Other colors all appeared to him to be gray. The question now arose as to where the seat of the affection was; for, as was also discovered, the patient did not form correct conceptions of the size of objects that were presented to him. The speaker had met with only three cases of hemianopsia superior in literature—viz., one cited by Mauthner, and two observed by Schweigger. Neither of these cases was followed by a post-mortem examination. Mauthner had suggested that in his case the hemianopsia superior was due to compression on the optic chiasm by a tumor. Such a supposition could be excluded absolutely in the case before the meeting. In all probability, in this case, there was a lesion of the visual center in the cortex of the occipital lobe. The speaker had pronounced his opinion on this subject in the last Congress for Internal Medicine at Wiesbaden, where he had said that, before all, from a clinical point of view, we had to distinguish between the centers of optic perception and the centers in which the optic images were reproduced. When we started from the anatomical point of view, these centers could be distinguished from each other as the cuneus and the first (and perhaps also the second) occipital convolution, which were the centers for the perception of the impressions of light, whereas in the other parts of the occipital lobes were probably situated the centers for the recollection of the optic impressions which had

been received. As to the case under consideration, the whole course of the disease was opposed to the localization of the cause of the affection at the base of the brain. The speaker could not imagine any process having its seat at the base of the brain and resulting in a sudden blindness. Hemorrhage at the base of the brain would be attended with other cerebral symptoms also, such as coma, etc. The pronounced impairment of the patient's faculties also pointed to a disease of the cerebral cortex. The fact that the process was bilateral made the explanation somewhat difficult; a unilateral disease would only have resulted in hemianopsia lateralis. The simultaneous sudden affection of both occipital lobes, however, not only was possible, but had on one occasion been observed by the speaker. A patient at his clinic, suffering from emphysema, who had always enjoyed good powers of vision, suddenly became blind during the night. A post mortem examination showed that there had been a softening process in the superficial parts of the cortex of both the occipital lobes, due to a bilateral occlusion of the cerebral blood-vessels by thrombi. Similar processes might also be present in the case under consideration, and they were probably produced by the early stages of atheroma of the cerebral arteries. The fact that the reflex irritability of the pupils was tolerably intact had to be looked upon as an evidence against the supposition that the optic thalami or the corpora quadrigemina were the seat of the disease, as those parts of the brain were the centers for these reflexes.

Dr. von Genser lately read a paper on the pathology and treatment of whooping-cough before the same society. He first discussed the ætiology of this frequent disease, and particularly recent investigations going to show that it was a parasitic affection. Speaking of the recent work of Afansiew on the *Bacillus tussis convulsivæ*, the author of the paper said that a permanent value must be accorded it. As to the treatment of this affection, he had availed himself of two methods on 200 children. The first method was that recommended by Michael, of Hamburg, viz., the insufflation of medicaments into the nose, and the second was the internal use of antipyrine. Michael, who considered whooping-cough as a reflex neurosis, was accustomed to order the insufflation, during a period of twenty-four hours, of a powder composed of one part each of powdered gum benzoin, sulphate of quinine, and nitrate of silver, and thirty parts of calcined magnesia. He had stated that he had obtained very favorable results in the great majority of his cases; that in 7 per cent. the disease had disappeared in from two to three days. The author of the paper had employed this method in thirty-six cases, and had insufflated the benzoin powder into the nose by means of a curved glass tube. The number of paroxysms daily was shown by means of curve-tables. The spasmodic stage was considered as the beginning of the disease. His curves had never been quite satisfactory, and he had never observed any such surprising successes as had been obtained from this treatment by Michael. The duration of the treatment had varied from nineteen to eighty days, the average having been forty-three days. The sole advantage of the method consisted in the fact that severe vomiting could immediately be stopped. On one occasion he had insufflated with quinine, but the child thus treated had instantly been seized with vomiting. The insufflation of antipyrine irritated children very severely; they were seized with severe cough, and the results were by no means favorable, nor the successes numerous.

In the employment of the second method, he had prescribed the internal use of antipyrine to about one hundred and twenty children, a grain and a half of the drug daily being ordered for each year of age, so that a child of the age of five years was ordered to take fifteen grains of antipyrine, in three ounces of water and syrup, in the course of two days. Sonnenberger had

recently reported favorable results from the internal use of antipyrine, and the author was able to confirm this statement quite emphatically. The paroxysms diminished considerably in number, and the individual attacks became shorter in duration and less intense. The duration of treatment had varied between fifteen and forty-five days; hence the average had been twenty-four days and a half. In five cases where the lungs were implicated the antipyrine had proved ineffectual. The drug was very useful and worthy of recommendation in cases of whooping-cough, and children took it willingly enough, as its bitter taste could easily be disguised. Its effect was either an antimycotic one—that is, destroying fungi that were present—or else a sedative one—it diminished the reflex irritability. It was indeed no specific against whooping-cough, but, on the other hand, it was quite harmless. General hygienic measures, of course, also needed to be observed as a part of this course of treatment. As to the experiments with acetanilide, which the author had also carried out in the treatment of whooping-cough, they had not proved satisfactory; the drug was not so efficient as antipyrine.

Dr. Brenner, house-surgeon in Professor von Dittel's clinic, showed some patients on whom he had performed osteotomy for genu valgum. He first reported on the progress of this method since its introduction into practice by Macewen, and then gave an account of his own experiments, by which he had ascertained that the bone could be cut through by means of a chisel (from without inward) without even injuring the periosteum, and, what was still more important, without injuring in any way the popliteal blood-vessels. He had succeeded on every occasion in performing such an operation in one or two minutes' time. In most of his cases a complete *redressement* had been performed immediately, the wound closed, and a plaster-of-Paris bandage applied. The latter was replaced by a new one after the lapse of a week, the second dressing being removed after eight weeks. The first patient shown was a joiner, nineteen years old, in whom no indications of a coming deformity had appeared until three years before, when he began to have severe pains in both the tibio-tarsal joints. The left leg had become four centimetres longer than the right one. *Redressement* was tried in vain. The femur was cut through at a point about five centimetres above the external condyle, and *redressement* was immediately performed. Healing was complete in about eight weeks. The operation on the other thigh was followed by as little reaction as that on the first one. The difference in length between the two extremities, however, now became visible, and the patient was becoming affected with scoliosis to a slight degree.

The second case was that of a man, twenty years of age, who was very poorly developed. In a similar manner, about three years previously, he had been seized with severe pains in the knee and in the tibio-tarsal joints, and at the same time became affected with genu valgum, developed to a high degree, so that he could walk only by means of crutches. Osteotomy was resorted to, but the operator did not at once succeed in performing *redressement*. However, after the lapse of eight days the dressing was changed for the first time, and *redressement* was then performed. The second dressing was removed after eight weeks, and since that time the patient had been able to walk without suffering any pain. As to the left leg, *redressement* had not yet been performed.

A third case, one of bilateral genu valgum, developed to a considerable extent (the external angle on the right side being 160° and on the left side 165°), had also been treated by osteotomy, and the patient had been dismissed from the clinic as cured some time since. There had been no fever after the operation, and the callus was solid.

Professor von Mosetig showed to the same society a very interesting case of intracranial bullet-wound. The patient, twenty-five years old, had shot himself with a pistol, with the intention of committing suicide. The bullet was seven millimetres in diameter, and had penetrated the skull in the right temporal region. The speaker saw the patient on the second day, and found above the right zygoma a wound of about the size of a pea, from which blood was constantly discharged. The bandage, which was saturated with blood, was immediately exchanged for a fresh one. The patient's consciousness was intact, and had been so from the first. Complete hemiplegia of the left side had supervened instantly upon the reception of the injury. This point was of importance, as such hemiplegias were usually established a considerable time after the lesion, and were due to subdural hæmorrhage giving rise to pressure on the brain. The patient, moreover, presented paralysis of the two lower branches of the left facial nerve, and there was also paralysis of the hypoglossus. The power of speech had entirely disappeared. In the right leg there was dorsal clonus. The speaker had decided against any surgical interference, and applied a moist dressing (iodoform gauze and gutta-percha). Bloody serum was discharged from the wound for five weeks, and the dressing was changed every second day. If a dressing of another kind had been used, retention of the secretions would have been the result. There were no disturbances in other organs; the functions of the bladder and intestines were performed normally, and there were neither disturbances of sensation nor impairment of nutrition. The patient's general condition became better day by day, without other aid than that of this so-called "expectant treatment." The paresis of the facial nerve first disappeared, power beginning to return after about the third week; the paralysis of the hypoglossus nerve also disappeared a short time later, and the patient could speak again. However, in the course of the sixth week the use of electricity was begun. The hemiplegia also became considerably better, leaving behind it a condition of hemiparesis. It was still to be remarked that on the second day after the lesion epileptic cramps had supervened on the hemiplegic side; but they had soon disappeared. Symptoms of contraction were still present in the left arm, and, besides this, there was also a reflex athetosis, or "chorea hemiplegica," which came on only when the patient yawned. It was therefore a reflex phenomenon, in the production of which the afferent impulse came to the brain by way of the fifth nerve. The left lower extremity was paretic; the sensibility was a little impaired. The tendon reflexes were augmented; dorsal clonus was still present; there was also a slight degree of dysarthria present. When the secretions of the wound had disappeared and granulations begun to develop, the wound was for a few times treated with nitrate of silver. Respecting the questions as to what kind of a lesion there had been in this case, and as to where the bullet had lodged, it was to be supposed that there had been a lesion in the cortex of the central lobe. The bullet must have done more or less injury to the centers of the hypoglossus and facial nerves, and those of the muscles of the upper and lower extremities. The paralysis in the hypoglossus and facial nerves had probably not been due to a direct lesion in their brain-centers, as, with time, this paralysis had entirely disappeared. Another supposition might be that the bullet had penetrated into the deep parts of the brain and had injured the corpus striatum. The contractions and the chorea, however, indicated a lesion of the cortex. The site of the bullet might be in the precentral and postcentral convolutions. The paretic symptoms had been ameliorated by the electrical treatment. The speaker was of the opinion that no surgical intervention would ever be necessary.

THE

NEW YORK MEDICAL JOURNAL,

*A Weekly Review of Medicine.*Published by
D. APPLETON & CO.Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JULY 28, 1888.

THE CONGRESS OF AMERICAN PHYSICIANS AND
SURGEONS.

THE first triennial session of this body must prove of considerable interest from more than one point of view. In its constitution it is unlike all other organizations of medical men, being a confederation of several special societies, each of which preserves its individuality and continues to hold its annual meetings as before. Indeed, at this triennial gathering itself the various constituent bodies will meet by themselves as usual, and conduct their own exercises quite after their ordinary manner. A common point of contact will be found each evening, when the component societies will be fused for the time being. It is understood that the proceedings at these evening sessions will be limited to scientific discourses and debates, together, we presume, with such necessary business as the choice of officers and committees and the decision, in a general way, of matters pertaining to the management of the affairs of the congress. We understand that there is to be a presidential address, and that there will also be debates on one or more subjects to be announced. Festivities have wisely been limited and social entertainments discouraged. Nevertheless, there is to be a dinner on the evening preceding the opening day of the session.

The advantages of the scheme are for the most part obvious. Perhaps the one that was uppermost in the minds of those who have taken part in promoting the movement is the facility afforded by such a gathering for bringing the members of the different participating societies face to face with each other—an occurrence that, repeated every three years, must be of service in blotting out whatever remnants of antipathy or lack of esteem there may be on the part of general practitioners for specialists, and *vice versa*, and of specialists for those of other specialties; and, besides, must tend to the dissemination of precise knowledge of the climatic characteristics of the various parts of the country in their bearing on medical questions. Its influence in the promotion of personal attachments between men who otherwise might never meet goes without saying. Moreover, at the evening meetings it ought to be possible, men of all specialties being present, to avoid in the discussions such situations as have occasionally come about in the meetings of special societies—for example, one characterized by rambling and inconclusive talk on a collateral, but essential, point that almost any man fairly conversant with a different specialty could have settled at once to the satisfaction of everybody present. An additional advantage to individuals suggests itself to us. Specialties overlap each other, as is well recognized, and all of them converge to the field of the general practitioner;

but some of them seem to go in pairs and are so intimately connected that the followers of one can not afford to neglect the other. The laryngologist, for example, would like to know how his brother, the otologist, manages certain details in the manipulation of the Eustachian tube; and the strict dermatologist may have something to learn from the syphilographer. It will readily be understood that but few of the members of the American Laryngological Association or of the American Dermatological Association could conveniently attend the ordinary meetings of the American Otological Society or the American Association of Genito-urinary Surgeons; but, when they can leave their own meeting for a short time and, by walking a few blocks in Washington, find themselves in the hall where something in which they are specially interested is about to be expounded, their convenience is found to go hand in hand with their inclination, and they are enabled to satisfy a real need without material sacrifice. Among the lesser advantages of this general gathering, too, is the fact that many an overworked man who has hitherto felt constrained to put off his departure for Europe or some other distant part, in order not to miss the meeting of his society—for the various societies have usually met at different times during the summer—may now allow himself more time away.

Whatever disadvantages may be found to attend the plan will probably prove to be of a minor character and perhaps to a great degree remediable. We should say that the chief of them would be the imposition upon the much-enduring physicians of Washington of the task of attending every three years to the arrangements necessary for the meetings; and the intention, as we understand, is to hold all the meetings in that city. Our brethren of the capital are energetic, public-spirited, and hospitable, and it is very sure that we shall never hear from them even the most roundabout hint to this effect, if, indeed, in their generosity they themselves recognize that they are bearing an undue burden; yet, we think that they ought not to be called upon to bear it, however willingly. Although the American Medical Association has recently deviated from its practice of holding its meeting in Washington every other year, it may at any time return to it, and, if it does, and if the triennial meetings of the Congress of American Physicians and Surgeons continue to be held there, four times in every six years will a load of anxiety and work, to say nothing of expense, be thrown upon the Washington profession. This is not just, and we trust that means may be found to change it.

As is well known, nearly all the national special societies have made their preparations to take part in the congress—all the important ones, so far as we know, except the American Gynecological Society. At its last meeting that society voted unfavorably on a motion to enter into the confederation, and resolved to hold its next meeting in Boston. Subsequently, however, at the suggestion of its Washington and Boston members, and with the approval of most if not all of its other members, it was arranged that its meeting for this year should be held in Washington and on the same days as those of the meeting of the congress. Practically, therefore, if not with due

formality, the gynecologists will take part in the congress, and the probability is, we presume, that the society will be formally constituted one of its constituent bodies. As the new American Association of Obstetricians and Gynecologists is to hold its first meeting in Washington at the same time, it is reasonably certain that gynecology will at all events be represented by a large number. It is to be remarked concerning two of the participating societies, the American Ophthalmological and the American Otological, that they have shown considerable energy and abundant confidence in their own resources by holding their meetings last week as usual, notwithstanding their prospective session in Washington. If, after very creditable proceedings in New London in July, as will be seen by our reports, they are able to acquit themselves commendably in Washington in September—and it is not to be doubted that they will—the devotion of our American ophthalmologists and otologists will be attested to a most notable degree.

All things considered, it seems to us that the first meeting of the congress is likely to be of a far more satisfactory character than most men would have foretold for it at the outset of the scheme. Much of its success will, we are persuaded, be due to the experience, discretion, energy, and social and professional standing of the chairman of the Committee of Arrangements, Dr. Busey.

MINOR PARAGRAPHS.

THE TRIBULATION OF A MESMERIST.

THE "Buffalo Sunday Morning News" gives an account of a mishap that is said to have overtaken a mesmerist lately. He was traveling about the country, giving public exhibitions in mesmerism, and, while in Sault Ste.-Marie, was asked to show his powers at an evening party to which he was invited. Among the persons whom he succeeded in mesmerizing was a young woman who is said to have come under the mesmeric influence very readily. Unfortunately, however, the exhibitionist found himself unable to dispel the mesmeric state in her case, do what he might. She insisted on following him about whithersoever he went. Medical men were called in, but nothing was of any avail. The man was advised, and indeed it seems to have been his own conviction, that he ought to make the only reparation possible, that of marrying the girl. This, accordingly, he is said to have done, although he was already under engagement to another woman. Whatever may be thought of the alleged facts in this case, there can be no question regarding the propriety of forbidding exhibitions of the sort, as has already been urged in Paris and elsewhere.

THE INCREASE OF THE MEDICAL AND PHARMACEUTICAL PROFESSIONS IN PARIS.

ACCORDING to the "Progrès médical," one of the newspapers of Paris has discovered that the *corps médical*, including medical men and pharmacists, has undergone a terrible increase since the year 1866. Then it numbered 6,506 persons, but now it contains 10,360. Paris, therefore, is not far behind New York in the proportion of its physicians and apothecaries.

RITUAL CIRCUMCISION IN PARIS.

THE "Revue générale de clinique et de thérapeutique" and the "Progrès médical" comment on a notable occurrence that

lately took place in Paris, the Israelitish consistory of which is regarded as the normal school of peritomy. The occurrence was a meeting of surgeons called together by the consistory and presided over by the chief Rabbi, to consider what changes should be made in the regulation concerning ritual circumcision to bring the operation more into accord with the surgical ideas of the day. It was concluded that suction of the wound was inefficacious and dangerous, and should be given up; certain rules of cleanliness were laid down; the re-establishment of the office of inspector of peritomy was proposed; and M. Duplay was charged with the preparation of a manual of circumcision and the after-treatment. All this is very creditable to the consistory.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 24, 1888:

DISEASES.	Week ending July 17.		Week ending July 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus.....	0	0	1	0
Typhoid fever.....	18	2	32	9
Scarlet fever.....	103	15	116	22
Cerebro-spinal meningitis....	5	4	3	4
Measles.....	244	16	208	13
Diphtheria.....	137	41	109	31
Small-pox....	3	0	9	0

The Congress of American Physicians and Surgeons.—

The Committee of Arrangements announces to the members and invited guests of the special societies taking part in the congress that the arrangements are sufficiently advanced to assure the success of the first triennial session of the Congress of American Physicians and Surgeons, which will be held in Washington, on the 18th, 19th, and 20th of September. A number of distinguished physicians and surgeons have signified their acceptance of the invitation to attend, among whom are named Sir Spencer Wells, Sir Andrew Clark, Sir William McCormac, Dr. W. O. Priestley, Dr. William Ord, Dr. Grainger Stewart, Mr. Lawson Tait, Mr. Victor Horsley, Mr. Thomas Bryant, Mr. Thomas Annandale, Professor Ferrier, Professor Esmarch, Professor Gerhardt, Dr. Rafael Lavista, of Mexico, Dr. J. L. Reverdin, of Geneva, Dr. O. W. Holmes and Dr. H. I. Bowditch, of Boston, Dr. Joseph Leidy, of Philadelphia, and Dr. W. Hingston and Dr. Eccles, of Canada. The preliminary programmes of the participating societies have been published. It is hoped that the classified and final programmes will be forwarded to the committee without delay. Several are already in its possession. As soon as all are received the final programme of the congress will be printed and distributed. Places of meeting for the congress and each of the societies have been secured, conveniently located, so that members may interchange attendance without annoyance. The meetings of the congress will be held in the evenings, beginning at eight o'clock; on the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last (Thursday) evening in the hall of the National Museum. During that evening the Army Medical Museum and Library building, alongside of the Museum building, will be lighted and opened for the inspection of the members and invited guests. The meetings of the societies will be held during the day, according to the programme each may respectively provide. The sessions will be open to the profession. On Monday evening, September 17th, a dinner will be given by members of the congress to the guests of the participating societies.

Invitations to this dinner will be sent only to the specially invited guests who have indicated their acceptance. The contributing members will receive cards of admission. It will be limited exclusively to members of the congress and invited guests. An informal collation will be served at Willard's Hotel on Tuesday evening, after the adjournment of the meeting of the congress, to the guests and those members who may choose to attend. A similar entertainment will be served in the National Museum building on Thursday night, after the final adjournment of the congress. Guests are requested to notify the chairman of the Committee of Arrangements immediately after their arrival in Washington, giving their address and stating whether they have ladies with them. Special arrangements will be made for the entertainment of the wives and daughters of the guests. Hotel accommodations are ample, and conveniently located to the places of meeting. The secretaries of the special societies are requested to forward to the chairman the names and addresses of their foreign guests. Members of the congress and the guests are expected to register. A parlor in Willard's Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained. All communications should be addressed to the chairman of the Committee of Arrangements, Dr. Samuel C. Busey, 1545 I Street, N. W., Washington.

The places of meeting of the several societies are announced as follows: American Surgical Association, Main Hall, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; Association of American Physicians, Hall No. 1, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; American Climatological Association, Hall No. 2, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; American Laryngological Association, Hall No. 3, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; American Dermatological Association, Parlor in Willard's Hotel; American Association of Genito-urinary Surgeons, Parlor in Willard's Hotel; American Neurological Association, Parlor in Willard's Hotel; American Orthopædic Association, Welcker's Hotel, Fifteenth Street, N. W.; American Otological Society, Arlington Hotel, Vermont Avenue; American Physiological Society, Army Medical Museum; American Ophthalmological Society, Arlington Hotel, Vermont Avenue and H Street; American Gynæcological Society, Columbian University, Fifteenth and H Streets, N. W.; American Association of Obstetricians and Gynæcologists, National Medical College Building, H Street, N. W.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 22 to July 28, 1888:*

DE WITT, CALVIN, Major and Surgeon. Leave of absence extended one month. S. O. 159, A. G. O., July 11, 1888.

BANISTER, WILLIAM B., Lieutenant and Assistant Surgeon. Leave of absence extended twenty-seven days. S. O. 157, A. G. O., July 9, 1888.

MCPARLIN, THOMAS A., Surgeon. Leave of absence extended one month. Par. 10, S. O. 160, Department of the Platte.

WOLVERTON, WILLIAM D., Surgeon. Leave of absence extended twenty days. S. O. 142, Headquarters Division of the Atlantic.

VICKERY, RICHARD S., Major and Surgeon. Leave of absence extended two months. S. O. 166, A. G. O., July 19, 1888.

CORSON, JOSEPH K., Assistant Surgeon. Leave of absence for one month, with permission to apply for an extension of one month. S. O. 78, Headquarters Department of the Columbia, Vancouver Barracks, Washington Territory, July 13, 1888.

DAVIS, WILLIAM B., Captain and Assistant Surgeon, will proceed to Fort Niagara, New York, for the purpose of completing his target practice for this year with Co. "C," 23d Infantry. Upon completion of this duty, Captain Davis will return to Fort Porter, New York. S. O. 145, Headquarters Division of the Atlantic, Governor's Island, New York city, July 17, 1888.

WOOD, LEONARD, First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Huachuca, Arizona Territory, to take effect at the expiration of his present leave of absence, and will report to the commanding officer at Fort McDowell, Arizona Territory. Par. 14, S. O. 162, A. G. O., July 14, 1888.

Society Meetings for the Coming Week:

WEDNESDAY, *August 1st*: Medical Society of the County of Richmond (Stapleton), N. Y.; Bridgeport, Conn., Medical Association.

THURSDAY, *August 2d*: Society of Physicians of the Village of Canandaigua, N. Y.

SATURDAY, *August 4th*: Clinical Society of the New York Post-graduate Medical School and Hospital; Miller's River, Mass., Medical Society.

Proceedings of Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-fourth Annual Meeting, held at New London, Conn., July 18 and 19, 1888.

The President, Dr. W. F. NORRIS, in the Chair.

A Memorial of Dr. C. R. Agnew was read by Dr. H. D. NOYES. Committees were appointed to draw up resolutions concerning the death of Dr. E. G. Loring and that of Dr. Joseph Aub.

A Contribution to the Treatment of Membranous Opacities of the Vitreous.—Dr. CHARLES S. BULL, of New York, read a paper which contained histories of fifteen cases of membranous opacities of the vitreous in which he had resorted to the operation first performed by von Graefe, an account of which was published in 1863. Internal treatment and local applications had no effect on those opacities of the vitreous demanding this operation. According to the nature of the case, he employed the discission needle, the sharp-pointed cataract knife, or a needle with a broader point. The instrument was inserted in front of the equator of the eye, just below the insertion of the external rectus. The likelihood of success from the operation was greater when the membranous opacity was situated well back in the vitreous, and when it was so situated it involved less danger to the lens. If pressure on the eye was avoided there would be little risk from hæmorrhage or escape of the vitreous. The operation should not be performed during the existence of inflammation or irritation. A sawing motion of the knife was avoided, lest the opening in the sclerotic should be enlarged so as to permit of the escape of the vitreous. The ophthalmoscope was not employed during the operation. Of the seventeen operations, on fifteen patients, there had been decided improvement of vision in fourteen, in three no benefit had followed, but in none had the operation caused any loss of vision.

Dr. W. F. MITTENDORF, of New York, thought that even vascularity of the vitreous membrane would indicate an unfavorable prognosis from an operation.

Pulsating Exophthalmia Cured by Ligation of the Common Carotid.—Dr. F. BULLER, of Montreal, gave the history of a patient who fell from a railroad bridge, striking the right side of his head upon a block. Great swelling of the head and face resulted, closing the right eye completely. When it subsided there was diplopia in that eye, one image being seen above the other. A loud sound was heard in the right ear. After some weeks the patient consulted Dr. Buller on account of pain. There was marked prominence of the right eye, with swelling of the lids. There were a thrill and a bruit, which were diminished by pressure upon the carotid. Irreparable injury to the sight being threatened, and the patient demanding some radical treatment, it was decided to tie the right carotid artery. The effect was immediate in a softer condition of the eye, a lessened size, and a diminution in the bruit and thrill. No cerebral symptoms were produced. The patient insisted on leaving the hospital after about seventeen days. During his stay there was uninterrupted improvement until he considered himself well; but the eye remained slightly displaced forward still. The speaker thought that the case was one of arterio-venous aneurysm, and not purely arterial.

Dr. J. O. TANSLEY, of New York, referred to a case of pulsating exophthalmia due to traumatism in a woman who had been advised by several specialists to have the carotid tied. He thought this was unnecessary, and gave iodide and bromide of potassium, and in six weeks the pulsating tumor entirely passed away.

Dr. C. J. KIPP, of Newark, related the case of a woman who sustained an injury of the head by falling down-stairs. She afterward heard a great noise in the ears, and soon the right eyeball became prominent, and the left one also, but in a less degree. When he saw her, the right eye protruded about four tenths of an inch, and the left about two tenths. Mobility was impaired in the right eye, as there was paralysis of the external rectus. A bruit was heard over the entire front of the head, increasing with the cardiac pulsations. The noise could be arrested completely by compression of the right carotid. Only an irregular compression of the carotid was practiced, iodide of potassium was administered, and after about three months the patient reported that one day the noise had completely disappeared, and that then the exophthalmia in both eyes had also gradually disappeared. The power of the external rectus had returned. A peculiar feature in the case had been the development of a projection over the right subclavian artery, but aneurysm could not be made out. On separate occasions, during the course of the affection, the anterior chamber of each eye had been completely effaced, but had subsequently resumed its normal state. The patient had used cocaine, and it was a question whether the effacement of the anterior chamber had been due to its effects upon the circulation, or to pressure.

Dr. RISLEY related a case which led him to make the statement that in aneurysm of the orbit the surgeon should first try pressure upon the carotid before resorting to ligation. In the case cited, the exophthalmia had disappeared almost completely after pressure, ligation not having been practiced.

An Analysis of the Refraction of 576 Healthy Human Corneæ examined with the Ophthalmometer of Javal and Schiotz.—Dr. SWAN M. BURNETT, of Washington, read a paper with this title. The 576 corneæ belonged to 301 persons examined by him within a little over a year. Pathological states of the cornea were excluded for consideration at another time. The corneal refraction was found in 110 persons to be the same in both eyes to within 0.251. The horizontal meridian (to within 5°) was the least refractive (astigmatism according to the rule) in 420 eyes. The vertical meridian was the least refractive (astigmatism against the rule) in 420 eyes. In 88

eyes the meridians were oblique. In 58 eyes the difference in the refraction of the two meridians was less than 0.251. In 101 eyes there was emmetropia. The largest number was a corneal refraction of from 441 to 451, the next largest from 431 to 441. The strongest corneal refraction was 471, the weakest 391. In 55 eyes there was simple myopia. The strongest refraction in the weakest meridian was 47.251; the weakest, 391. The corneal refraction did not in any considerable number of cases bear a close relation to the degree of the myopia. Simple hypermetropia was present in 59 eyes.

The weakest refraction in the weakest meridian was 40.51. The corneal refraction was no indication as to the degree of the general hypermetropia. Myopic astigmatism was present in 140 eyes. In 4 eyes the general astigmatism was greater and in 11 it was less than the corneal. In 14 eyes the difference between the axis of the corneal meridian and that of the prescribed glasses was greater than 5°. Hypermetropic astigmatism was present in 96 eyes. In 4 eyes the corneal astigmatism was greater and in 2 eyes it was less than the general. The axes corresponded in all but 9 eyes. Compound myopic astigmatism was found in 63 eyes. In all but 7 eyes the corneal and general astigmatism corresponded, and in 44 eyes the axes corresponded. Compound hypermetropic astigmatism was present in 55 eyes. In 31 the corneal and general astigmatic meridians corresponded, and the corneal and general astigmatism were the same in all but 4 eyes. Mixed astigmatism was present in 8 eyes. In 4 eyes the corneal and general astigmatism was the same. In 2 the corneal was less, in 1 greater. The corneal and general astigmatic meridians were the same in 5 eyes. In 42 eyes the general astigmatism was against the rule, while in only 18 of these eyes was the corneal astigmatism against the rule. From his examination under a mydriatic, the author felt warranted in thinking that many cases of lenticular astigmatism were due to an oblique position of the lens. Corneal astigmatism was, with very few exceptions, according to the rule (the vertical meridian the stronger). From a study of these statistics, the author felt warranted in concluding that, while the corneal refraction gave no indication of the general refraction of the eye, the astigmatism in the vast majority of cases expressed the general astigmatism, as to both degree and direction of its axis, and he therefore considered the instrument of Javal and Schiotz one of the most, if not the most, important means for the diagnosis of the anomaly. He did not think astigmatism more productive of progressive myopia than of any other form of ametropia.

Dr. H. D. NOYES had found the ophthalmometer a most valuable and time-saving instrument.

Progressive Hypermetropic Astigmatism.—Dr. J. B. EMERSON, of New York, read the history of a case the records of which extended from 1879 to 1888.

Edema of the Chorioid and Retina.—Dr. E. JACKSON, of Philadelphia, reported the case of a young man who had been struck in the eye with a marble or a small stone, causing a bruise of the left eyeball. The ophthalmoscope showed localized swellings of the chorioid and retina at the posterior pole of the eye, the chorioidal spots having the usual grouping of ruptures in this region. These spots disappeared in about a week. There was also at first some (0.75 D.) myopic astigmatism, which gradually diminished and entirely disappeared in three weeks, leaving the sight perfect.

A New Form of Cataract Knife.—Dr. JACKSON also exhibited a knife designed to combine the advantages of the Graefe and Beer knives. The point, resembling that of a Graefe knife, allowed the puncture and counter-puncture to be made in the same way as with the Graefe knife, while the rest of the

blade, having the shape of Beer's knife, enabled one to complete the incision as with that instrument. With it the puncture and counter-puncture were wholly under control, the flap was completed at a single thrust, the aqueous was not lost until the incision was nearly finished, and the counter-pressure by the back of the knife assisted in steadying the eye.

New Instruments were presented by Dr. TANSLEY, consisting of a lacrymal syringe; modified probes for enlarging the lacrymal canal; a clamp to close the entrance to the lacrymal duct, and prevent the passage of atropine solution into the nose and throat; and an improved style.

Aluminium Lacrymal Probes were shown by Dr. THEOBALD. Being very smooth and slippery, they gave less pain than silver probes, and did not oxidize.

Dr. RISLEY, Dr. THEOBALD, and Dr. NOYES gave the results of some examinations as to the size of the lacrymal canal in the dry skull, and the lesson drawn was that, inasmuch as the size of the canal varied much in different subjects, and perhaps also on the two sides in the same subject, one could be governed in the use of probes only by actual trial in each case.

Symptomatic Myopia.—Dr. MITTENDORF said that the fact that myopia as a symptom of certain affections of the eye was so little appreciated had led him to prepare this paper. Traumatism might give rise to symptomatic myopia, but the condition occurred more commonly with some disease. In some rare cases it had been caused by dislocation of the lens forward. Of greater frequency was a myopic condition due to swelling of the lens in the initial stage of cataract. Myopia could be demonstrated only when the lens remained sufficiently clear. The vision might be relieved temporarily with concave glasses. Myopia was present in infiltration of the vitreous and during the course of glaucoma, serous chorioiditis, and iritis. It probably occurred most frequently in iritis. It disappeared when the eye was restored to health. Illustrative cases were mentioned to show that a myopic condition was brought on by the diseases enumerated, and that it disappeared with their cure.

Dr. KOLER, recently of Vienna, thought that the myopia in iritis might be due to spasmodic action of the muscle, as it was possible only partially to overcome the irritation present and produce paralysis of accommodation.

Dr. GREEN, of St. Louis, said that since the time, twenty years previously, when he had first observed transient myopia in iritis in his own case, he had found the condition to be not uncommon, and while he was not prepared to advance any theory for its explanation entirely satisfactory to his own mind, yet he was loath to admit that it was due to spasm of accommodation.

Hysterical Blindness in the Male.—Dr. W. OLIVER MOORE, of New York, stated in this paper that Briquet had found, out of one thousand cases of hysteria, fifty in males, while other authors had found the proportion of males to females suffering from the disease as one to fifteen. From 1875 to 1885, in France, no fewer than five theses on hysteria in the male had appeared. In males the symptoms lasted longer than in females, and they were more likely to occur in weak and effeminate subjects. Lasègue had been led to employ the term peripheral hysteria, from the fact that any form of irritation in a patient predisposed to hysteria might act as the exciting cause. For instance, a foreign body on the cornea might prove sufficient to set up the full train of nervous symptoms. A simulated one-sided blindness was not uncommon among those who sought to avoid military service. In each of his three cases, the author of the paper stated, some shock had been produced, incidentally, in the treatment; in the first by electricity, in the second by etherization and canthoplasty, and in the third by ether alone. In all, an assurance to the patient that the cause

had been discovered, but without his being informed that he had hysteria, had acted as an important factor in the cure. It was a mistake to tell the patients that there was nothing the matter, that they simply had hysteria, for they were all anxious to be cured, but had not sufficient power of will to overcome their fault of themselves. Any operation or any shock was sufficient to cure them.

A Series of Tests for the Detection and Determination of Subnormal Color-perception (Color-blindness), designed for Use in Railroad Service.—Dr. CHARLES A. OLIVER, of Philadelphia, said that it was a well-known fact that many persons affected with color-blindness, especially of the medium grades, had the power of distinguishing even the most difficult colors when the ordinary wool tests were placed at the usual distance employed in the detection and determination of the degree of the affection. With the hope of overcoming the dangers that might arise from having men who had passed such imperfect tests, but were really color-blind for greater distances, in situations where the safety of lives often depended solely upon an accurate recognition of colors at great distances, he had arranged two modifications of the test, by which the candidate should be placed in the actual position and under circumstances exactly similar to those of his employment. His method was divided into three parts: First, the selection and registry of a definite number of loose wools from twenty-three pure and confusion match-skeins, thrown upon a dead-black surface at a distance of 1 metre. Second, the selection and registry of the same number of similar reflected colors, under various intensities of diffused daylight, requiring the candidates to recognize and enumerate them at the same distances as it was necessary they should be able to tell them apart when engaged in actual service on railroads or at sea. Third, the selection and registry of a set of transmitted colors, under various intensities of diffuse daylight stimulus, placed at the distances requisite for safety. Among a number of marked advantages which the method had were: It was much more rapid than any other method; it provided for the selection of loose wools at distances; it employed the same character of signals as was in use in daily routine; it did not call for an expert, except in doubtful cases; it allowed such distances and conditions of weather to be introduced as would actually be met with by the candidates when on duty.

Embolism of the Central Retinal Artery.—Dr. OLIVER also gave the history of a case of embolism of the central retinal artery in which complete blindness had developed suddenly and continued.

Dr. MITTENDORF had seen several cases, and in them considerable improvement in vision had followed. However, in these, he thought, only several of the arterial branches had been affected. When the whole caliber of the artery was involved the prognosis was much less favorable.

Dr. NOYES thought that most cases reported as embolism of the central retinal artery were cases of thrombosis. Only two of those in which autopsies had been held had proved to be cases of embolism.

(To be concluded.)

AMERICAN OTOLOGICAL SOCIETY.

Twenty-first Annual Meeting, held at New London, Conn., July 17, 1888.

The President, Dr. J. S. PROUT, in the Chair.

A Case of Aural Vertigo (Meniere's Disease) relieved by Excision of the Membrana Tympani and the Malleus.—Dr. CHARLES H. BURNETT, of Philadelphia, read a paper with

this title. The operation was performed upon the left ear of a woman thirty-six years old. The ear had been affected for many years with chronic aural catarrh of the sclerotic form, accompanied by hypertrophic naso-pharyngeal catarrh. Ordinary treatment of the aural catarrh had failed to relieve the tinnitus and deafness. Within the past two years she had also suffered from vertigo. The malleus was found, on inspection, to be adherent to the promontory, but the membrane was movable. Believing that the vertigo and the tinnitus were due to retraction of the chain of auditory ossicles, and the consequent inward pressure of the stapes on the labyrinthine fluid and immediately on the semicircular canals, the author had considered that excision of the drum membrane and the removal of the malleus and incus from their attachment to the stapes would be likely to relieve the tinnitus and vertigo by permitting the stapes to move freely in the oval window, and thus take off the pressure from the labyrinthine fluid. This was therefore done under ether anæsthesia, illumination being obtained by the electric head-lamp. The relief from the sense of pressure in the ear and the tinnitus was almost immediate, and at the present time was entire, and there had been no return of the vertigo in the two months since the operation. As the hearing had not been improved by the removal of the membrana tympani, when a new membrane had begun to form no attempt had been made to prevent the growth of this new dermoid diaphragm, which was now nearly complete. Its formation had not been followed by any return of tinnitus, nor of vertigo, because there was no ossicular connection between it and the internal ear, and hence no pressure on the labyrinth.

Dr. J. O. TANSLEY, of New York, thought the operation was a serious one, as being apt to set up a worse condition than the one it was intended to relieve. He had under his care a girl who had been thus operated upon a year and a half ago by another physician. After removing a large number of polypi, he had found a necrosis which extended up fully an inch in the direction of the atticus tympanicus. The girl had been suffering from serious brain symptoms, which, however, he had much relieved by treatment.

Dr. BURNETT suggested that the necrosis and brain symptoms in this case were probably due to an improperly performed operation. In the case he had related and in another one alluded to there had been some discharge after the operation, which had nearly disappeared as the drum membrane healed.

Dr. C. J. KIPP, of Newark, remarked that one surgeon had done the operation about thirty-five times for tinnitus and had abandoned it as unsatisfactory, although it had been followed by no injurious results. Schwartz performed it only for necrosis of the hammer.

Dr. SAMUEL SEXTON, of New York, had resorted to the operation over fifty times for tinnitus and other subjective symptoms, in many cases with very decided benefit, and in none with any aggravation of the symptoms.

A New Portable Battery for the Storage of Electromotive Force.—Dr. SEXTON exhibited a small, light storage battery, of three cells, which was capable of maintaining a light of six-candle power for several hours. It would remain charged a number of weeks. In connection with the battery he presented a new head-lantern for the employment of the electric light in aural surgery. The light was stronger than that of the Argand gas-burner. Non-conducting material was used in the construction of the lamp, so that the heat, ordinarily an objection to the employment of the electric light, would not trouble the operator.

Reflex Influences in the Production of Naso-pharyngeal Catarrh.—Dr. ALBERT H. BUCK, of New York, in a paper so entitled, called attention briefly to those comparatively remote

causes of naso-pharyngeal catarrh which acted probably through the vaso-motor fibers of the sympathetic nerve. Of the direct exciting causes of naso-pharyngeal catarrh we knew little. Of these the commonest was chilling of the surface of the body; the next in frequency, according to certain American and English authorities, though not in his own experience, were affections of the teeth. He had found irritations of the gastro-intestinal tract, in not a few instances, a strong exciting cause of naso-pharyngeal catarrh and of the aural troubles growing out of such a catarrh. This relationship was easily traceable in only a minority of the cases. In one of his patients the naso-pharyngeal catarrh and tinnitus aurium had been markedly increased after the ingestion of certain articles of food and their passage downward from the stomach. The attacks were accompanied by the escape of large amounts of gas from the stomach. The author also gave the history of a case of naso-pharyngeal catarrh and tinnitus aurium in a woman who, after some time, was found to have retroversion of the uterus associated with chronic and subacute parametritis. Exacerbations of the uterine trouble caused exacerbations of the naso-pharyngeal catarrh and ear symptoms. Since the treatment of the pelvic affections, the naso-pharyngeal catarrh and the distressing subjective noises had been so slight as to require no further use of the nitrate-of-silver solution. The author knew of no reason why the conditions mentioned might not be direct causes also of naso-pharyngeal catarrh.

Dr. TANSLEY thought it would be difficult to trace the exact connection between naso-pharyngeal catarrh and diseases of the uterus, since both were so commonly present in the same person, and from independent causes. Catarrh was certainly often aggravated by faulty assimilation of food. He recognized a constipated habit as a marked cause of anæmia and chlorosis and their associated naso-pharyngeal and aural troubles.

Dr. RISLEY thought the symptoms in Dr. Buck's first case pointed to disturbance of the liver as the cause of the naso-pharyngeal condition. He was himself affected in a somewhat similar manner.

The further discussion turned largely on the treatment of naso-pharyngeal catarrhs and other affections. Dr. TANSLEY and Dr. BURNETT thought that not a few cases of aural disease were due to treatment of nasal affections by those who gave too little attention to the ear.

Dr. THEOBALD spoke of the virtues of nitrate-of-silver solutions, while Dr. TANSLEY, Dr. BURNETT, and others cautioned against the danger of a sclerotic condition following their use.

Dr. KIPP had seen no harm result from a solution not stronger than 20 per cent., followed immediately by the use of salt water.

Dr. H. D. NOYES, of New York, said the gouty diathesis or lithæmic state was common along with naso-pharyngeal catarrh with ear symptoms.

A Contribution to the Anatomy of the Elephant's Ear.—Dr. BUCK presented the bony part of the ear of an elephant, together with the Eustachian tube. The drum membrane was situated about seven inches from the external meatus. The canal was filled with desquamated material. The cavity was surrounded by large air-chambers, two extending nearly to the external meatus. The Eustachian tube was seven or eight inches long. The labyrinth had not been dissected.

Polypoid Angeioma of the Ear.—Dr. HUNTINGTON RICHARDS, of New York, presented, through Dr. Buck, a paper giving the history of a case. Micro-photographs of the specimens had been made by Dr. Freeborn. The patient, a girl, aged six years, had been brought to his clinic in May last on account of a profuse foul discharge from the ear. It dated from February,

and was unaccompanied by pain. The hearing was good. There had been no bleeding from the ear. A polypoid mass was seen almost occluding the lumen of the canal, of a deep purplish-red color. The tumor was removed with a snare, leaving a small pedicle attached apparently to the outer surface of the drum membrane. The stump was cauterized with chromic acid. A day or two later the drum membrane appeared to have a minute perforation two millimetres distant from the cauterized stump. The discharge ceased completely after the removal of the polypus, and the perforation, if there had been one, was never subsequently detected. The hæmorrhage on the removal of the growth had been profuse. Dr. Freeborn had pronounced the specimen one of angioma.

False Drum Membrane.—Dr. Buck also read this paper for Dr. RICHARDS. The patient, a young man, was totally deaf in one ear, and vaguely recalled an attack of otitis media in childhood. In the other ear there was otitis media purulenta chronica. On examining the ear which was not discharging, the author had been struck by the very unusual appearance of a membrane occluding the canal at a depth of far less than the usual situation of the drum membrane. It was about five millimetres and a half in the vertical diameter and about five in the transverse. At all points of the periphery it merged without break into the skin lining the external canal, yet it differed from the normal membrane in respect to color, shape, the relation of the plane to the long axis of the canal, its smooth surface, its apparent thickness, and its depth from the external meatus. The color was dead-white at the periphery and a dark-gray at the center. The inflation of the ear had no effect on the hearing nor upon the appearance of the membrane. Thinking there was a true drum membrane back of it, and hoping to improve the patient's hearing, he made an opening about four square millimetres in area through the false membrane. There was no true drum membrane. The depth to the tympanic cavity was fifteen millimetres. The hearing was only slightly improved by the operation. No discharge had been established when the patient was seen a few days later, although it had been feared when it was learned that the true drum membrane was largely perforated.

Dr. SEXTON, Dr. SUTPHEN, Dr. TANSLEY, Dr. KIPP, Dr. CAPRON, and others related similar cases, and regarded the condition as being the presence of a dermoid diaphragm the development of which had been due to some irritation.

Dr. RANDALL cited the case of a child whose ear became partially detached from the scalp during delivery, and was replaced the following day. The plug inserted to keep the canal patent had to be removed on account of pain. A discharge appeared and continued during twelve years, when he discovered and broke through a false membrane, which contained a small perforation; the drum membrane was also perforated. The operation on the false membrane had been followed by a cessation of the discharge.

The Use of the Flexible Catheter for Drainage in Diseases of the Ear.—Dr. J. B. EMERSON, of New York, thought the flexible catheter the best means of establishing drainage in certain aural and mastoid affections. By this means the canal or opening was kept patent and drainage was satisfactory. It had so proved in one case of exostosis from the bony canal, one of necrosis of the canal, and two of disease of the mastoid cells, all of which had been operated on.

Dr. O. D. POMEROY, of New York, said that some years ago he had described before the society a method of using the flexible tube for drainage in cases of ear disease in children where there was such a swelling of the lining membrane as to interfere with natural drainage. He stretched a soft elastic tube over a small probe, which could then be introduced into the

nearly closed canal, and on withdrawing the probe the tube retracted, thereby increasing in size and so enlarging the channel.

Three Cases of Transient Bilateral Horizontal Nystagmus in Connection with Purulent Inflammation of the Middle Ear.—Dr. KIPP reported the cases. They had all had certain features in common. The history of the second was as follows: A young man, whom he had successfully treated six years previously for acute otitis media purulenta, had recently returned to him, again suffering with ear trouble. He had found that the drum membrane was punctured and was discharging a large quantity of purulent matter. But the otorrhœa and pain continued, in spite of his treatment, a long time. At last a swelling formed behind the mastoid, and with its appearance the patient had several epileptoid attacks. One day, when pressing on the swelling, the speaker noticed pus escaping from the auditory canal, and with it marked nystagmus developed, which lasted ten minutes. In this patient the nystagmus could be produced at will by pressing upon the mastoid. He subsequently opened the mastoid and evacuated pus, and the patient's condition had improved. In the third case the jerking of the head, the dilatation of the pupils, and the rapid movements of the eyelids were brought on during irrigation of a mastoid abscess, the injection being made with considerable force. The nystagmus could thus be produced at will until the abscess closed. All the cases had occurred in young men, and in all the hearing was greatly diminished when tested by the watch or the voice, yet the tuning-fork could be heard quite distinctly in the diseased ear. These cases were not altogether novel; some had been reported in Europe in which increased pressure in the vestibule had caused nystagmus and vertigo. He supposed the pressure was transmitted or reflected from the ear to the motor center for the eye muscles.

Dr. POMEROY thought that neurologists had not given sufficient attention to suppurative disease of the ear as a cause of epileptoid attacks.

An Improved Aural Snare.—Dr. TANSLEY presented the instrument, which was intended to avoid the snap or jerk which occurred on cutting through polypi with the ordinary snare, to which he thought the pain was mostly due.

Foreign Bodies in the External Auditory Canal.—This paper, by Dr. SEXTON, was read by title.

Teratoid Tumor of the Auricle.—Dr. L. E. HOLT related the further history of a case of tumor of the auricle which he had first mentioned five years before. On its recent removal, the pathologist had found it to be a teratoid tumor. About eighteen years ago Dr. Ripley had removed a simple fibroma from the same locality.

Officers for the Ensuing Year were elected as follows: Dr. J. S. PROUT, president; Dr. GORHAM BACON, vice-president; Dr. J. J. B. VERMYNE, secretary and treasurer. The next meeting will be held in Washington on September 18, 1888.

NEW YORK CLINICAL SOCIETY.

Meeting of May 25, 1888.

Dr. J. H. EMERSON, afterward the President, Dr. J. WEST ROOSEVELT, in the Chair.

Grouped Cells in Ascitic Fluid as Diagnostic of Malignant Disease of the Peritonæum.—Dr. H. C. COE demonstrated the presence of the sprouting cell-groups of Foulis in a drop of ascitic fluid withdrawn the day previous from the abdomen of a patient with undoubted secondary cancer of the peritonæum, who had been under observation for some time at the Cancer Hospital. His attention had been directed to these cells by Dr. Welch seven years before, and since then he had sought

for them in every specimen of ascitic fluid submitted to him. Although he had found them but once in cases of cancer of the liver, even where the omentum had been affected, he could recall several cases in which the presence of numerous cell-groups had led him to diagnosticate malignant disease of the ovaries and peritonæum, and in which diagnosis had been fully confirmed by a subsequent exploratory incision or autopsy. He thought that every pathologist who had given this question careful consideration must disagree with Tait, who, in the last edition of his work on "Diseases of the Ovaries," had said that he placed no reliance on the presence or absence of these cells in fluid removed by tapping. At the same time that author was correct in affirming that these elements were not always found. The speaker believed that, when they were found in the free fluid, they denoted the presence of an exuberant malignant growth, either carcinoma or sarcoma; they might also indicate the outgrowth of papillomatous material through the wall of an ovarian cyst, with extension of the disease to the peritonæum. He had always deprecated a resort to exploratory incision in cases in which advanced malignant disease was strongly suspected, since, so far as his own observation extended, little additional information was gained, and the patient frequently either succumbed to the shock of the operation, or, if she recovered from it, grew rapidly worse. He thought that a careful examination of the fluid withdrawn with an aspirating-needle would often render the diagnosis so clear that the patient would be spared such operative interference.

Salol as an Internal Antiseptic.—Dr. E. H. PEASLEE read a paper on this subject.

Dr. EMERSON inquired whether any other treatment had been employed during the use of salol in the two cases of suppurative disease of the ear.

Dr. PEASLEE replied that nothing else was done than to wash out the ear with clear water, as had been done for some time before he saw the patients.

The PRESIDENT asked Dr. R. J. Hall what he thought of any internal antiseptic as such.

Dr. HALL replied that he had been skeptical to the last degree as to the value of so-called internal antiseptics for theoretical reasons. He was still more skeptical since trying sulphide of calcium, which some had recommended so highly in suppurative diseases. He had employed it extensively, but with absolutely negative results. He had also tried other drugs recommended as internal antiseptics, such as minute doses of bichloride of mercury, but also with negative results. Therefore, when a new one was brought forward it required much clinical evidence to convince him of its value.

Dr. L. EMMETT HOLT thought that a drug might have some effect in cutting short inflammations, as in amygdalitis, without acting as an antiseptic. He had not employed salol, but he had used salicylate of sodium, the action of which he supposed to be very similar, in amygdalitis, and he thought the results had been beneficial. The drug was administered in large doses, and the cases had been only those of ordinary follicular amygdalitis with more than usual constitutional symptoms.

Dr. HALL also had used salicylate of sodium in amygdalitis with very good results, which he was disposed to attribute to the local effect upon the mucous membrane and upon the rheumatic diathesis rather than to any direct germicidal influence. His cases had also been those of follicular and not of phlegmonous amygdalitis.

Dr. WALTER MEDELSON believed that salol, and in fact all the salicylates, were good internal antiseptics, although not in the sense, perhaps, in which Dr. Peaslee had employed that term. After being administered, they split up into phenol and other components, which were in their nature antiseptic, and in

that form passed away with the excreta. Thus, he had given salol in cystitis with good results, and he believed its action had been at least partly local in that it passed out of the body with the urine. The same was true of its use in gonorrhœa, the urethra being washed out with the antiseptic fluid. He did not think it produced its results by killing germs in the blood. He also had used it in amygdalitis with good results, due, he thought, to its influence upon the gouty or rheumatic diathesis, probably the gouty. Recently our empirical knowledge of the benefit derived from this group of drugs in rheumatic and gouty patients had been supported by the observations of Haig, of London, who had shown that salicylic acid, contrary to most acids, facilitated the elimination of uric acid. The speaker believed that in patients who were accustomed to having one or two attacks of amygdalitis yearly there was usually a rheumatic or, as he believed, a gouty diathesis, and for that reason salicylic acid, salol, etc., acted beneficially on the tonsillar inflammation. He had never used salol in other forms of suppuration than those of the bladder and urethra.

Dr. W. GILMAN THOMPSON had used salol in some cases of rheumatism, and had found it no better and no more prompt in its action than salicylic acid or salicin, and some patients had not borne it so well. He believed that those who could not retain salicylic acid or salicin would also vomit salol. He had recently used it in suppurative amygdalitis with rheumatism, but he did not think it preferable to other remedies which he had been accustomed to employ.

Dr. W. H. KATZENBACH had used salol very little, but he had found salicylate of sodium almost a specific in follicular amygdalitis. The more acute the case, the more efficient the drug.

The PRESIDENT had the records of six cases of follicular amygdalitis in all of which the inflammation of the tonsil had disappeared with the occurrence of articular rheumatism. If he remembered correctly, Dr. Kinnicut had reported a case in the "Archives of Medicine" in which the amygdalitis was replaced by gout. In all of his own cases a salicylate had been given, with the immediate effect of lessening the severity of the amygdalitis, but when this disappeared it was replaced by rheumatism, which ran a course influenced more or less by the drug.

Dr. PEASLEE remarked that his cases had been selected from among those of patients in whom previous attacks had ended in suppuration.

Multiple Neuritis.—Dr. H. M. BIGGS presented a man who, when he first saw him, had what he believed to be hypertrophic spinal pachymeningitis. There was more marked extension of the hand and flexion of the fingers than at present. After examining the patient more carefully, he had come to the conclusion that the case was one of multiple neuritis. The patient, as fireman on a steamboat, had become overheated about three years before, and was seized with fever and severe pain in the head. His fever continued five or six days, and on the sixth or seventh day there suddenly developed paralysis of the upper and lower extremities, a little later affecting the back. After this, severe pain developed in the paralyzed parts, particularly in the joints, with tenderness. The pain lasted about ten months. This, the speaker thought, was an unusual feature in the case, as ordinarily the pain did not last so long. It had been more than two years before the patient was able to walk at all. He now had a good deal of weakness in the anterior group of muscles of the leg and some inco-ordination. There was an alcoholic history, which had probably been an ætiological factor in the case.

Albuminuria in Diabetes.—Dr. COE read a paper with this title (see page 88).

Dr. MENDELSON fully agreed with Dr. Coe on the general

points made in the paper. He had not gone over the statistics of his examinations, but he thought that in the great majority of his cases of diabetes albumin also had been found in the urine. Recently some one in Germany had gone over the cases of a Carlsbad druggist who made most of the urinary examinations for the doctors there, and had found that in about thirty per cent. of all the cases of diabetes the urine contained albumin. The speaker had found that as a rule the albumin diminished as the amount of sugar diminished, but in some cases it became increased in quantity. In the latter instances he thought there was a nephritis complicated by diabetes rather than diabetes complicated by nephritis; that is, the nephritis was the more important disease of the two, for usually the diabetes could be controlled by diet, while nothing would control the disease of the kidneys. In diabetic cases albumin was usually present in the urine only in small amount, and it was commonly due, he thought, to circulatory changes in the kidneys or such lesions of the epithelium as occurred with the presence of sugar in the blood. He had usually found a few hyaline casts, but they came and went. Sometimes the albumin almost entirely disappeared and again reappeared. He did not think albuminuria of itself was a grave complication in diabetes, but, when there were granular casts, or a large quantity of albumin, or other indications of nephritis, the prognosis became very grave, although he had seen patients live with this condition much longer than he had expected. There was a class of cases of glycosuria in which there was only a trace of sugar in the urine, with a trace of albumin and a few hyaline casts, which usually ended in granular nephritis. Two cases which he then recalled had been in patients who gave a gouty family history, some of the members having died of granular nephritis, and his impression was that these two would finally die of that affection.

The PRESIDENT inquired regarding the tension of the pulse in the two cases referred to.

Dr. MENDELSON had not studied the tension of the pulse specially, but the patient's condition had improved rapidly under treatment.

Dr. THOMPSON's experience had been much like that of Dr. Mendelson. He had examined a good many specimens of diabetic urine, and had very commonly found some albumin, to which he had not attached much importance. He believed that traces of albumin were often overlooked, and that it was only when considerable quantities were present that it was detected. It was exceptional in diabetes of long standing not to find some albumin at some time. Regarding the condition acetonæmia, he doubted whether it was capable of accounting for diabetic coma. In fact, diabetic coma was not yet understood. Certainly uræmia would not account for it in all cases. It was true, albumin appeared in the urine after giving dogs acetone, but it was also true that it had been given them in large doses without producing symptoms of coma. A German had taken as much as two drachms of acetone without feeling any effects whatever. That amount, it seemed, should cause coma if the drug were capable of producing that state.

Dr. KATZENBACH had a female patient who had come under his observation recently with glycosuria. He had examined the urine but once. It contained eight grains of sugar to the ounce, and had a specific gravity of 1.040. He had expected to find albumin, but there was not a trace of it.

Dr. GEORGE B. FOWLER had recently read a paper in Brooklyn, in which he had given expression to the view that often symptoms regarded as indicative of kidney disease were simply the evidence of a condition leading to general decay; that the same state existing in the arteries and kidneys would be found in other organs of the body. Albumin and sugar appeared and disappeared in the urine in various cases which physicians were

accustomed to see every day. When the albuminuria or the glycosuria became more permanent, it was evidence to him that the general decay was becoming more marked. There were conditions, such as that known as lithæmia, in which there was likely to occur either albuminuria or glycosuria, or both. If that condition continued long enough to produce pathological changes, the symptoms referable to the organs most disturbed would predominate. If albuminuria followed glycosuria, and afterward there appeared granular casts, etc., in the urine, the prognosis would, of course, become more grave. He agreed with Dr. Coe and the other speakers that albumin frequently existed in the urine of diabetic patients, but was not found, because of the great dilution. Sugar might also escape detection because of the presence of other elements in unusual quantity. In a well-established case of diabetes the urine was practically a watery solution of sugar, and when albumin was present in very small quantity it was difficult to detect. In women its presence might be attributed to disease of the kidneys when it came from the genital organs.

The PRESIDENT remarked that he had always regarded acetonæmia as an incident in diabetic coma, and not at all as being an explanation of it; just as he thought that the occurrence of uræmic coma was often accompanied by an increase of urea in the blood, but not caused by it.

Dr. COE asked the president in what manner he would account for the relative increase in the amount of urea.

The PRESIDENT said there was no definite relation between the quantity of urea and the occurrence in cases of uræmic or diabetic coma. One might also be unable to demonstrate acetone in a case of diabetic coma.

Dr. FOWLER had seen two of that class of patients in whom urine containing sugar was loaded with phosphates. The sugar in these two instances had disappeared under strict diet, but would return.

Dr. THOMPSON inquired of the members what their experience had been with bromarsine, for which some of the Germans alleged excellent results in diabetes.

The PRESIDENT said that in the cases in which he had employed it the patients had reacted so well to diet that he could not say how much influence could be attributed to the drug.

Book Notices.

Inebriety: its Ætiology, Pathology, Treatment, and Jurisprudence. By NORMAN KERR, M. D., F. L. S., Fellow of the Medical Society of London, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xxx-415. [Price, \$3.]

It is notoriously extremely difficult for a "total abstainer" to write temperately on the subject of temperance; but Dr. Kerr, in the present work as in his many previous publications, has manifested a conscientious purpose to deal judicially and objectively with a question of grave social import, and, despite occasional indications of an unintentionally myopic view of pathology and statistics, the results of his long observation of the phenomena of inebriety are of interest and value, not alone to medical readers, but to the public.

While admitting that in some instances drunkenness is a voluntary vice, unexcused by any constitutional craving for alcohol or other narcotics, the author holds that the existence of such craving is evidence of a physical disease which may often be diagnosed before it leads to oinomania or narco-

mania. His definition of inebriety includes addiction, not only to alcohol, but to opium, chloral, chlorodyne, chloroform, cocaine, or gelseminum, and he discusses at much length the ætiology (in which heredity is made to play a prominent part) and pathology of the neurosis which underlies these habits. As regards morbid anatomy, it might be objected that many of the post-mortem appearances ascribed to alcoholism are common in other conditions among abstemious persons, and there is the usual fallacy of arguing from excessive doses of alcohol to small ones—a course which, if applied to our materia medica, would leave us scanty means of therapeutics. It is curious to find an avowed advocate of vegetarianism rehearsing the trite assertion that alcohol must in all circumstances be condemned as a poison because it does not enter into the composition of the living tissues, as the same indictment might be brought against starch and sugar. It will also be a surprise to most American readers to learn that, even in moderate quantities, the daily imbibition of lager beer “tends to melancholy, ending occasionally in self-destruction.” A similar repetition of unsubstantiated hypotheses is exemplified in the allegation that alcohol induces special forms of phthisis and pneumonia, and in the author's estimates of the shortening of life by even “moderate drinking”; whereas the recent report of the Collective Investigation Committee of the British Medical Association indicates rather that total abstinences are as a class shorter lived than those who use alcoholic beverages temperately, and that neither phthisis nor pneumonia is materially affected by alcoholic excess. In thus criticising, we have no intention to antagonize the author's laudable motive, in which all physicians would gladly aid, but we are convinced that exaggeration, however honest in its origin, does more harm than good to the cause of reform. The chapters on treatment add little to the measures with which almost every practitioner of large experience is dishearteningly familiar, the conclusion commonly reached being that for inebriety the sole cure is abstinence, which, with the weakened will of the inebriate, must in the vast majority of cases be compulsory.

Differential Diagnosis. A Manual of the Comparative Semiology of the more Important Diseases. By F. DE HAVILLAND HALL, M. D., Assistant Physician to the Westminster Hospital, London. Third American Edition, thoroughly revised and greatly enlarged. Edited by FRANK WOODBURY, M. D., Professor of Therapeutics and Materia Medica and of Clinical Medicine in the Medico-chirurgical College of Philadelphia, etc. Philadelphia: D. G. Brinton, 1887. Pp. xi-17 to 255.

THIS work, it is stated in the publisher's note to the third American edition, is founded upon Dr. Hall's “Synopsis of the Diseases of the Larynx, Lungs, and Heart,” but has been made to embrace also all the more frequent and important diseases. The object of the book in presenting, side by side, the more prominent and reliable symptoms of diseases which have some resemblance to each other, has been fairly well carried out. But we must make some exceptions; for instance, we think that the diagnosis of varioloid from varicella is much more valuable than that of röteln from variola, and should not have been omitted in a book of this kind. As regards the sequelæ of scarlatina, an important omission occurs—that of rheumatism. It is stated that the papular eruption of variola becomes vesicular in the course of twenty-four hours. This is an error, for it takes at least from two to three days for the change to take place. The section devoted to the differential diagnosis of the diseases of the respiratory apparatus is very thorough and leaves nothing to be desired. The index is meager and defective and detracts materially from the book as one of ready reference. Still, the book may be recommended on the whole as one likely

to assist the practitioner in the diagnosis of the various diseases. Those engaged in teaching will find in it many valuable hints in imparting to the student the points of difference of kindred affections.

Ueber Atonie des Magens. Von Dr. R. FREIHERR V. PFUNGEN. [Klinische Zeit- und Streitfragen.]

THIS monograph forms one of a series which appear periodically in Vienna and deal with questions of the day. It discusses very fully the subject of which it treats. The author seems well up in the literature of gastric ailments, but his method of citation is very confusing and detracts from the value of the article. On reading it one is reminded of Burton's “Anatomy of Melancholy,” where quotations and authorities crop up from everywhere and evoke a feeling of admiration for the author's varied learning and ready memory. According to the author, atony of the stomach may exist as an idiopathic affection, and is chiefly to be recognized on percussion by increase of the area of the gastric note, which may reach to within an inch of the umbilical line. The subjective symptoms are a fullness and a sense of oppression after eating, which reach their climax in from two to three hours; anorexia; lassitude, etc. There is usually considerable emaciation. The treatment, though simple, would appear from the cases narrated to be attended with marked success. It consists chiefly in the administration of small doses of bicarbonate of sodium two hours after the principal meal of the day, a smaller dose to be repeated within an hour if the subjective symptoms continue. Hydrochloric acid in water may be given with the meals. The amount of nourishment is to be increased by taking from two to three pints of milk a day between meals. Meat should enter into the fare of at least two meals of the day.

Manual of Clinical Diagnosis. By Dr. OTTO SEIFERT, Privat Docent in Würzburg, and Dr. FRIEDRICH MÜLLER, Assistant der ii. med. Klinik in Berlin. Third Edition, revised and corrected by Dr. FRIEDRICH MÜLLER. Translated, with the permission of the Authors, by WILLIAM BUCKINGHAM CANNFIELD, A. M., M. D. (Berlin), Fellow of the American Academy of Medicine; Member of the Medical and Chirurgical Faculty of Maryland, etc. With Sixty Illustrations. New York and London: G. P. Putnam's Sons, 1887. Pp. xi-173.

THIS is a valuable little manual, embodying all the more recent and practical methods of clinical investigation of disease. It may be very highly recommended to the general practitioner, who will find it of considerable service in his daily labors. The translator has done his work well, as has also the publishing house.

A Synopsis of the Physiological Action of Medicines, prepared for the Use of Students of the Medical Department of the University of Pennsylvania, with the Approval of the Professor of Materia Medica. By LOUIS STARR, M. D. Third Edition, enlarged. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii-9 to 72. [Price, 75 c.]

THIS seems to be a very good synopsis, and can not fail to be of service for those for whom it is intended. The arrangement is excellent.

The Year-book of Treatment for 1887. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co., 1888. Pp. viii-336. [Price, \$1.25.]

THIS valuable little year-book is equal to its predecessors. The matter seems to have been well culled and is concisely stated. It is pleasant to note that American writers receive a fair share of attention. Special consideration is accorded to

intubation, which the reviewer recommends should be given a fair trial, although he thinks that it can not rival tracheotomy. The criticisms of some of the reviewers on their respective texts enhance the value of the book.

GENERAL LITERARY NOTES.

AMONG recent foreign publications we note the following:

F. ALCAN, Paris.—L. Jacques, "Intubation du larynx dans le croup." (2fr. 50.)

J. B. BAILLIÈRE & FILS, Paris.—E. Duval, "Traité pratique et clinique d'hydrothérapie." (10fr.)

O. BERTHIER, Paris.—F. Bosselut, "De la méningite tuberculeuse chez les jeunes enfants âgés de moins de deux ans." (4fr.)

A. DELAHAYE & E. LECROSNIER, Paris.—J. Maricourt, "Manuel de métallothérapie et de métalloscopie appliquées au traitement des maladies épidémiques, burquisme et magnétisme animal." (3fr. 50.)

O. DOIN, Paris.—V. Parant, "La raison dans la folie." (7fr.) — G. Treille, "De l'acclimatation des Européens dans les pays chauds." (2fr.) — E. Lecorché and C. Talamon, "Traité de l'albuminurie et du mal de Bright." (14fr.) — C. Masson, "Des troubles moteurs post-épileptiques."

G. MASSON, Paris.—G. Bernutz, "Conférences cliniques sur les maladies des femmes." (12fr.) — D. Mollière, "Leçons de clinique chirurgicale professées à l'Hôtel-Dieu de Lyon." (8fr.)

BUREAUX DU "PARIS MÉDICAL," Paris.—E. Bouchut, "Tubage du larynx ou intubation. Comprendant: 1° Mémoire de M. Bouchut, communiqué en 1858 à l'Académie de médecine de Paris et les observations du croup guéri par le tubage du larynx; 2° Mémoires lus à l'Académie de médecine de New York, par A. Jacobi, J. O'Dwyer, *et al.*; 3° Une introduction par E. Bouchut."

BUREAUX DU "PROGRÈS MÉDICAL," Paris.—A. Perret, "Traité du glaucome." (4fr.)

P. SAVY, Paris.—E. Verrier, "Du traitement des métrites chroniques par les eaux minérales de France." (1fr.)

G. STEINHEIL, Paris.—Le Gendre, Barette, and Lepage, "Traité pratique d'antisepsie appliquée à la thérapeutique et à l'hygiène." (10fr.) — L. Gioux, "Contribution à l'étude de l'insuffisance des muscles de l'œil et de son traitement par la téno-myotomie partielle." — A. Cordes, "Un utéro-sédatif; un utéro-moteur."

H. LAMERTIN, Brussels.—G. Tournay, "Du mécanisme de la délivrance et de l'intervention du praticien dans cette période de l'accouchement."

F. VALLARDI, Milan.—S. Plevani, "Manuale pratico di farmacia e dei nuovi rimedi." 2d ed. (15l.) — G. Cesari, "Il ferro e suoi preparati." 2d ed. (4l.) — P. Schivardi, "Manuale teorico pratico di elettroterapia." 2d ed. (7l. 50.) — G. Turazza, "Antisepsi ed antisettici nelle medicazioni chirurgiche." (4l.)

BOOKS AND PAMPHLETS RECEIVED.

Partial Syllabic Lists of the Clinical Morphologies of the Blood, Sputum, Fæces, Skin, Urine, Vomitus, Foods, including Potable Waters, Ice and the Air, and the Clothing (after Salisbury). By Ephraim Cutter, M. D., LL. D., etc. New York: Published by the Author, 1888. Pp. xviii-81. [Price, \$1.]

Sixth Annual Announcement of the Medical Department of Niagara University, Buffalo, N. Y. Session of 1888-'89.

Suggestions toward a More Rational Procedure in Wasting Diseases. By Samuel S. Wallian, A. M., M. D., New York. [Reprinted from "Gaillard's Medical Journal."]

The Treatment of Hæmorrhoids. By Hunter P. Cooper, M. D., etc., Atlanta, Ga.

The Early Diagnosis of Spinal Caries, with Remarks on Treatment. By Hunter P. Cooper, M. D., etc., Atlanta, Ga. [Reprinted from the "Atlanta Medical and Surgical Journal."]

Conservatism in Gynæcology. By A. Reeves Jackson, A. M., M. D., etc., Chicago. [Reprinted from the "Chicago Medical Journal and Examiner."]

Fourteenth Annual Announcement of the Medical Department, University of Tennessee. Nashville Medical College, Session of 1888-'89.

Proceedings of the Sanitary Convention held at Owosso, November 22 and 23, 1887. [Supplement to the "Report of the Michigan State Board of Health" for the Year 1888.]

A Practical Text-book of the Diseases of Women. By Arthur H. N. Lewers, M. D. Lond., M. R. C. P. Lond., Assistant Obstetric Physician to the London Hospital, etc. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi-400. [Price, \$2.25.]

Anæsthetics; their Uses and Administration. By Dudley Wilmot Buxton, M. D., B. S., Member of the Royal College of Physicians, London. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xii-164. [Price, \$1.25.]

Ptomaines and Leucomaines, or the Putrefactive and Physiological Alkaloids. By Victor C. Vaughan, Ph. D., M. D., Professor of Hygiene and Physiological Chemistry in the University of Michigan, and Frederick G. Novy, M. S., Instructor in Hygiene and Physiological Chemistry in the University of Michigan. Philadelphia: Lea Brothers & Co., 1888. Pp. viii-13 to 316. [Price, \$1.75.]

Transactions of the Medical Society of the State of West Virginia. Twenty-first Annual Session, held at Huntington, May 16 and 17, 1888.

Un cas de cancer du larynx. Considérations sur la laryngectomie. Par le Dr. J. Charazac, de Toulouse (Communication faite à la Société française d'Otologie et de Laryngologie, séance du 26 avril 1888).

Operatiunea lui Alexander in prolapsul si retroversiunea uterului. Tesa penten Doctorat in Medicine si Chirurgie. Dr. Leonida Varnaly, Baccalaureat in litero si sciinte, etc. Bucuresci, 1888.

The Prophylactic and Therapeutic Resources of Mankind. A Paper read before the International Congress of Anthropology, held at Columbia College, New York, June 4 to 7, 1888. By Henry C. Hanchett, M. D., etc. [Reprinted from the "New York Medical Times."]

Twenty-fourth Report of the Trustees of the City Hospital, Boston, with Reports of the Superintendent and Medical and Surgical Staff, Rules for Admissions and Discharges, Prospectus of Training-School for Nurses, etc., 1887.

The Male Urethra, its Diseases and Reflexes. By Fessenden N. Otis, M. D., Clinical Professor of Genito-urinary Diseases in the College of Physicians and Surgeons, New York. Detroit: George S. Davis, 1888. Pp. viii-86. [The Physicians' Leisure Library.]

Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

Anthrarobin is the latest addition to our dermatological therapeutic resources ("Vierteljahr. f. Derm. und Syph.," 1888, Heft 2). It is introduced to us by Liebermann, of Berlin, who describes it as derived from certain coloring matters (alizarin and flavo- and anthrapurpurin) by chemical reduction. He believes that its action, as well as that of chrysarobin, is due to its oxidizing properties. It occurs as a yellowish-white, odorless, granular powder, which is permanent in dry air. It is insoluble in cold water and acids diluted with water; very soluble in cold, watery solutions of alkalies, ammonia and earthy alkalies, assuming a brownish-yellow color. But these solutions are not permanent, as they readily absorb oxygen from the air, their color changes through a green into a blue, and finally an alizarin-violet. It is soluble with difficulty in benzol and chloroform, and in acetic acid and alcohol to a much greater extent than chrysarobin. It is also soluble in glycerin and in borax solutions. This new product has been tested by Behrend, and found to be very useful. It may be used in the form of an ointment, or dissolved in glycerin, or as a tincture, and in the strength of from ten to twenty per cent. The tincture proved itself most useful, and was prepared according to the following formula: Anthrarobin, 5; alcohol, 45. Dissolve on a water-bath. It may also be made with double the strength of anthrarobin. In any form the drug is well borne by the skin, never producing irritation like chrysarobin, so that it can be used on the face and scalp without danger. It

stains the skin and the under-clothing yellow, and causes sometimes the sensation of burning, which is not severe. It was tried in 15 cases of psoriasis, 17 cases of ringworm, 2 cases of erythrasma, and 1 case of pityriasis versicolor. Its action is not so rapid as is that of chrysarobin, but quite as sure. It is more active when applied to the skin after washing with green soap. It is about one third cheaper than chrysarobin or pyrogallol.

The Poisonous Action of Petroleum upon the Organism in General and upon the Skin.—Lewin (Virchow's "Archiv," 1888, Heft 1) has made a study of this subject. The latter part alone interests us at present. Many observers have reported various skin lesions resulting from the use of petroleum in the treatment of the itch—such as wheals, small ulcers upon erysipelatous bases, and an eruption of acuminate vesicles upon a red base. Lewin has invaded this country and observed the effects of petroleum upon the operatives in Pennsylvania. He found that the heavy oil was very different in its effects from the light oil. The workers upon the oil-pumps are affected with an eruption of hazel-nut sized, transparent, white boils. These affect both young and old, and last in some cases a year or more, in others but a few weeks. The common form of eruption is an outbreak of equal-sized pimples and boils, which do not itch, and are located upon the arms and hands. In some laborers the disease relapses frequently. Some escape the disease entirely. Frequent washings of the skin with soap seemed to lessen the tendency to the production of these boils. Sometimes nearly the whole of the skin is affected. Those laborers who were not in constant contact with the raw product escaped the eruption. In the refining works, those who handled the light oil and the kerosene were not affected, while those who handled the heavy products left after refining were so, especially when they neglected frequent washing of their hands and face. Some skins become accustomed to the irritation in a few weeks or months and react no more, while some skins never become habituated. The disease produced is essentially an acne; red, hard papules with a central black point upon an indurated reddened base. Furuncles also were scattered about. Some papules were surmounted by a vesicle; if located about a hair follicle, the hair was frequently wanting, and a gaping opening was left. These were seen most frequently on the arms and legs. All this disturbance was caused by the irritation of the follicles of the skin by the petroleum.

Medicinal Eruptions.—Lesser reports ("Deutsch med. Wochenschrft.," April 5, 1888) a case of erythema following a hypodermic injection of calomel. The erythema was general, and of a scarlatina red, paled rapidly away, and ended by scaling off of epidermis. The erythema appeared eleven hours after the injection of the calomel.

The Treatment of Acne.—Fournier ("Gaz. des hôp.," Jan. 10, 1888) recommends for the treatment of acne the use of ignipuncture by means of a fine malleable platinum rod, heated in the alcohol flame, and introduced perpendicularly into the diseased follicle. Some ten glands are treated at a sitting, the part is then dressed with cold water, and afterward with mercurial plaster. He regards this procedure as being safe, and by far the surest mode of treatment. Together with the use of ignipuncture, the habits of life are to be regulated, and sulphur mineral waters drank.

The Treatment of Acne with Comedones.—Besnier ("Jour. de méd.," April, 1888) advises for this affection, when the comedones are very profuse, the application every night during eight days of a pomade made as follows: Salicylic acid, two parts; precipitated sulphur and potash (soft) soap, each fifty parts. After eight days an emollient dressing is to be used, and it will be seen that many of the comedones are destroyed.

Comedones in Children.—T. Colcott Fox ("Lancet," April 7, 1888, p. 665) has seen over forty cases of comedones in children. Unlike what obtains in adults, these comedones usually occur in well-defined groups or aggregations, all the follicles of a certain part being plugged up. Their most common location is close to the hair along the forehead over the center of the eyebrows. They may extend clear across the forehead and down each side onto the cheeks in front of the ear. They may also affect the hairy scalp over its anterior one third or quarter, or upon the occiput, or behind the ears. Inflammation now and again occurs, and acne-like lesions may appear, which usually are slight

in extent and merely secondary to the comedones. They seem to be slightly contagious, as they occur more frequently in some parts of London than in other parts, and it is not uncommon to see several members of the same family affected at the same time. In twenty-five out of thirty-six cases the disease appeared between the fifth and ninth year, in sixteen cases between the fifth and seventh year. The youngest patient was one year and ten months old. It is rather more frequent in males than in females. The spring-time, especially March, is the most common time of their appearing, and in winter they tend to disappear. They often come and go in a surprisingly rapid and unaccountable manner. They are not associated with any one condition of health, though it is worthy of note that they occurred with four different cases of alopecia areata. The plugs consist of epithelial matter, and not of imperfectly formed sebum.

Seborrhœa is believed by Gamberini ("Giorn. ital. delle mal. ven. e della pelle," 1887, No. 5) to be due to a parasite, especially on the scalp, and he has observed that treatment directed to the destruction of the saccharomyces so often found in seborrhœa capitis suffices to cure obstinate cases of seborrhœa. Pityriasis is for him a seborrhœa to which a slight superficial hyperæmia of the skin has been added, sufficient to raise up the corneous layer of the epidermis.

The Treatment of Carbuncles and Boils.—According to Eade ("Lancet," May 19, 1888), carbuncles can be cut short at almost any stage of their course. When they begin as pimples, continuous soaking with a solution of a mild antiseptic, such as boric acid or salicylic acid, will almost certainly destroy them. At a little later period they may be aborted by thrusting freely into their central or cribriform openings a strong solution of carbolic acid in water or glycerin. When they become large and solid they must be partially or entirely excised or else incised, and the boggy material scraped away. If surgical proceedings are refused, the continuous application of carbolic solutions in oil or glycerin, with or without poulticing, will do much to improve their condition. Boils may be treated on the same principle, but the heroic surgical procedure is not necessary.

The Treatment of Erysipelas.—During eighteen months, Polotebnov, of St. Petersburg, tried various methods of treating erysipelas, and now ("Monatshft. f. p. Dermat.," 1888, No. 5 *et seq.*) reports the results of his experiments. Some cases he treated on an abortive plan, and some on the expectant plan. For the first, he used a solution of nitrate of silver, a half-drachm to the ounce; for the second, cold-water compresses. Sixty patients were treated, one half of them by one method and one half by the other. The disease in those treated with the silver solution lasted, on an average, seven days and a half, while in those treated with compresses it lasted eight and a third days. Albuminuria was present in seventeen of those treated by nitrate of silver and lasted an average of three days, while in those treated by compresses it was found eighteen times and lasted three and a third days. The death-rate was the same under both methods of treatment—that is, one for each. Forty out of the sixty cases took their beginning at the nose, the mucous membrane of which was inflamed, often excoriated and covered with crusts. Of the sixty patients, six were treated while in the permanent bath, and of these one was at the same time under the silver-nitrate treatment, and five were under that of compresses. The indications for the use of the permanent bath were a temperature of over 40° R., a weak, quick pulse, the presence of considerable albumin in the urine, pulmonary catarrh, pneumonia, marked cerebral disturbances, or any grave complication. They served to reduce the temperature and strengthen the heart. From a study of these cases, Polotebnov has been led to rely upon the use of simple compresses exclusively, and discards all other applications, such as ointments and powders. The compresses may be used warm or cold, but patients generally prefer them warm.

Sycosis.—Unna ("Monatshft. f. prkt. Dermat.," 1888, Nos. 5 and 7) discards the generally accepted division of sycosis into the parasitic and non-parasitic forms, and regards both as parasitic, though due to different parasites. The first, or the one usually termed parasitic sycosis, he names *hyphogenous sycosis*, and the second, or the one usually termed non-parasitic sycosis, he names the *coccogenous sycosis*. He recognizes the occurrence of the first under two forms: a superficial one, like ordinary ringworm, and a deeper process with the formation of tubercles. When pustulation or abscess occurs in the deeper form, he believes it to be due

to the entrance of the pus cocci. The hope is held out that at some future day a different fungus may be demonstrated for these two forms of ringworm of the beard just as Quinke has demonstrated his α , β , and γ fungi of favus. The second, or the *coccigenous sycosis*, he regards as due to the entrance of pus cocci into the hair follicles. It may arise from an antecedent eczema, or a nasal catarrh, or other causes. Special stress is laid upon the use of the microscope and upon cultivations in the diagnosis of sycosis, though a correct diagnosis can usually be made by the clinical appearances alone.

Treatment.—When ringworm of the beard occurs in superficial rings and the beard is not shaven, the following ointment should be applied night and morning after washing with an antiseptic soap, viz.: R Ungt. pomadin., 20; resorcin, 2. M. To this may be added hydrarg. bichlor., 0.05. If the beard is shaved, a zinc paste may be substituted for the ungt. pomad. This paste is composed of 90 parts of ungt. zinc. benzoat. and 10 parts of terra silicea. This is best applied with the moistened finger upon the moistened skin. When dry the part may be lightly rubbed over with a dry towel, and thus there will be left a fine white powder on the skin. If the disease is very superficial and the face shaved, it will be sufficient to touch the part daily with the sublimate or resorcin pencil (see "N. Y. Med. Jour.," July 10, 1886) or to use a spray of resorcin, 5; hydrarg. bichlor., 0.01–0.05; aq. cologniensis, spiritus, aa 50; ol. ricini, 1. M.; and powder the part subsequently. When the disease has gone deeper and nodes are formed, the beard must be shaved or cut short and one of the following plaster mulls applied and closely bound down: (1) Hydrarg., 20; ac. carbolic, 7.5. (2) Hydrarg., 10; ac. carbol., 10; sublimate, 1. (3) Hydrarg., 10; ac. carbol., 10; sublimate, 2; zinci oxid., 10. If there is no pustulation, epilation need not be practiced. When the nodes have gone, the above-mentioned resorcin paste may be used.

The Ætiology and Symptomatology of Alopecia Areata.—Joseph has already demonstrated the connection between this disease and nerve lesions, and now ("Berlin. klin. Wochenscht.," Jan. 20, 1888) adduces further arguments in support of his belief of its dependence upon disturbances of the nutrition of the parts affected. It is a known fact that dogs soon become bald when deprived of nitrogenous food, and Remy ("Jour. f. Anat. u. Phys.," 1880) has reported a case of entire fall of the hair from the body of a man suffering from cirrhosis of the liver. Moleschott ("Atti. della real. acad. delle sci. di Torino," 1878) observed the decrease in the growth of hair and nails in a case of catarrh of the bladder. But in these cases the connection between the hair-fall and the disease is by no means clear. On the other hand, most cases of alopecia areata are preceded by headache which lessens or ceases when the hair falls. Sometimes this headache is in the form of a pricking sensation which may be closely limited to the soon-to-be-affected spot. Many cases occur at puberty and at the age of dentition. There is nothing pathognomonic in the appearance of the affected hairs. The affection has its seat in the matrix, and is due neither to micro-organisms nor to alterations of the blood-vessels, but simply to the action of the trophic nerves. In the experiments upon cats the hair fell out on the fifth to the twenty-seventh day. In a patient Joseph was able to determine the lapse of two days between a nervous shock and the fall of hair, and its continuance for fourteen days. The hair grew in in six months and a relapse took place in three years. The manner of distribution of the bald places and their characteristics are strikingly similar in man and in the animals operated on. In cats, in a number of places the hair first became thin, and after a time complete baldness set in. The contour of these places was always quite regular, sometimes circular, sometimes oval, sometimes oblong, constantly sharply defined. These places sometimes remained discrete, sometimes two or more ran together. Further, both in clinical cases and experimental ones, there was marked symmetry in the arrangement of the patches. This is an argument for the nervous origin of the disease. The sensibility of the skin is not altered, nor should we expect it to be, as by disturbances of sensation fall of hair does not take place. That depends upon trophic disturbances. It is probable that other causes than tropho-neuroses may give rise to alopecia areata, though so far they are unproved.

Treatment of Alopecia Pityriodes.—A six-per-cent. pomade of re-

sorcin is recommended editorially in the "Monatshft. f. p. Dermat.," 1888, No. 6, for the treatment of this affection. It is to be applied at night and a cap of oiled silk to be then put on and worn until the next morning. Once a week the scalp is to be washed with tinct. sapo. viridis.

Urticaria is regarded by Fournier ("Gaz. des hôp.," Feb. 23, 1888, *et seq.*) not as a disease in itself, but a simple dermatological type of eruption. This view he bases upon the fact that the wheals appear under a great variety of circumstances, arising from both internal and external irritation. It presents itself under a great variety of forms: sometimes as distinct round wheals; sometimes as linear wheals; sometimes as gyrate lines; sometimes it takes on a hæmorrhagic character; sometimes it has no white center, but is a congestive papule approaching an erythema. Of the congestive form there are five varieties, viz.: 1. Erythematous, roseolous, or macular urticaria, consisting simply of rosy spots, slightly raised, without central discoloration, but otherwise presenting the characteristics of urticaria. 2. Scarlatinous urticaria, resembling scarlatina in the smallness of the spots and in their color. 3. Papular urticaria, met with in badly-cared-for infants, and seated upon the backs of the hands and feet and sometimes on the face. 4. Urticaria taking the aspect of a furuncular swelling, met with, for instance, upon the lips and the result simply of location. It presents a large red, hard swelling, greatly deforming the lip. 5. Urticaria nodosum, which exactly resembles erythema nodosum, the lumps varying in size from that of a small nut to that of a turkey-egg. The skin is intensely red, and the part is tender upon pressure, but not very itchy. The lesions are discrete, and leave ecchymotic macules on fading. Sometimes we meet with urticaria in the form of a local œdema without redness or efflorescence, which comes and goes suddenly, often relapsing upon the same region. It may also occur upon mucous membranes; probably sometimes upon those of the stomach, intestines, and lungs, giving rise to sudden and evanescent disturbances of digestion or respiration. It may be also a symptom of malarial disease, or septicæmia, as well as quite frequently arising from digestive disturbances, uterine disorders, nervous diseases, rheumatism, and gout. It may be hereditary in some cases. In any case a certain predisposition on the part of the individual is necessary for its production.

The treatment must be directed to overcoming the cause where discoverable. There can be no specific for the disease. For local treatment we must use something to relieve the itching, such as cold cream, vaseline, hot water, solutions of alcohol or vinegar, chloroform, chloral water, powders of rice or starch, or some such lotion as this: Hydrate of chloral, 3 parts; aquæ laurocerasi, 50 parts; distilled water, 200 parts.

Acute Circumscribed Œdema Cutis.—A study of this affection by G. Riehl will be found in the "Wien. med. Presse," 1888, Nos. 11 to 13. This disease is known also as giant urticaria, acute angio-neurotic œdema, and *urticaire massive*. It is marked by disturbances of the general health and of the bowels, and by peculiar manifestations upon the skin, all of which are dependent upon a common cause. The most prominent symptom, and sometimes the only one, is the acute appearance and rapid disappearance of œdema of the skin, subcutaneous tissues, and certain mucous membranes. The eruption appears without cause or prodromes, and reaches its height in from one to three hours. It consists in an edematous swelling without any inflammation, which shades off into the sound skin, is hard or firm to the touch, preserves for a time the finger print, is of normal color or transparent white or red, and may attain the size of the hand or larger. The epidermis is stretched and glistening. The temperature of the part is normal; the sensibility is somewhat reduced; there is no pain. There is some burning and tickling, but seldom itching. The average duration of a single efflorescence is twenty-four hours. There is usually a single lesion to each attack, though there may be a number of lesions, or a single lesion may spread, creeping slowly along. The pharynx, larynx, or nose may be similarly attacked, and so much dyspnœa caused as to require tracheotomy. The trunk is seldom attacked. The disease relapses from time to time, lesions at first appearing in different places, but afterward tending to recur in the same place. The frequency of the attacks is variable; sometimes the patient will remain free for a time, to have new attacks at intervals of eight to fourteen days, or even every three

or four weeks. The duration of the disease may be weeks or years. The oft-repeated oedema may lead to permanent stretching of the skin, or to a slight thickening of the same. In some cases vomiting, somnolence, constipation, suppression of urine, or albuminuria may be prominent symptoms. It occurs at all ages and may be inherited. The cause of the disease is unknown. It is probably a vaso-motor disturbance originating in the central nervous system. It differs from ordinary urticaria in the marked absence of itching. Treatment has thus far been in vain.

Pruritus Pudendi may be successfully treated, according to Routh ("Brit. Med. Jour.," April 14, 1888), by bathing with a solution made by putting a teaspoonful of borax into a pint of hot water, shaking thoroughly, and adding five drops of oil of peppermint. If there are any excoriations, or if eczema is present, this will cause too much smarting, and it is better to substitute for it olive-oil, with five grains of iodoform to the ounce.

Senile Pruritus.—Besnier ("Jour. de méd.," April, 1888) recommends for this troublesome affection starch baths, and sponging the whole body every evening with a spoonful of a mixture of aromatic vinegar, 250 grammes, and carbolic acid, 5 grammes, to a bowl of hot water. Then the body is to be powdered with a powder of starch, 90 grammes, and salicylate of bismuth, 10 grammes. Salicylic acid may be substituted for the bismuth.

The Treatment of Lupus.—In the treatment of lupus erythematosus Heller advocates ("Wien. med. Presse," 1888, No. 16, *et seq.*) the use of antiphlogistics, especially cold stupes, either with simple water or with solutions of Goulard's extract, bichloride of mercury, or lime-water, at the same time administering cooling acidulated drinks. He objects very strongly to the use of caustics, multiple punctures, or scarifications, and the curette. He believes that the eruption is but the expression of a diseased condition of the blood and an anomalous nervous action. It may depend upon anæmia or digestive disturbances, and demand attention to the diet and the exhibition of alkalies and mineral waters. If the digestion is in good order, then iron and arsenic will do good service. Attention must be given to the nerves, and bromides or chloral administered *p. r. n.* He has used carbolic acid by the mouth, sometimes with good result. Ergotin has also been of excellent service where congestion of the head has been a prominent symptom. Iodoform by the mouth has proved useful when the disease shows a disposition to spread. If the disease does not yield to simple antiphlogistics, then recourse must be had to *spt. sapo. viridis*; *ung. hyd. oxid. rubri* (2 per cent.); *emplast. hydrarg.* to small spots; Fowler's solution of arsenic, which, outwardly applied, speedily cures, applied once daily until inflammatory symptoms appear, when cold stupes are to be used; lactic acid, in 30- to 50-per-cent. solution. For obstinate patches it is recommended that they be rubbed with a coarse piece of linen until they bleed, and then painted with Fowler's solution.

In the treatment of lupus vulgaris we are likewise advised not to use caustics, scarifications, or the curette, but to employ daily applications of solutio Fowleri. If reaction is set up, or when the infiltration and swelling have disappeared, or the ulcers are already granulating normally, the solutio Fowleri is to be stopped, and a solution of carbonate of sodium (one in eight) is to be used. Cicatrization of the ulcers is to be hastened by the use of either Goulard's extract or a mixture of bichloride of mercury, 0.15, and lime-water, 150. Internally, iron and arsenic are of use, while cod-liver oil and phosphorus are without value. Ergotin is sometimes useful.

Hypodermic Injections of Iodoform in Tuberculosis Cutis (Lupus).—Morel-Lavallée ("Ann. de derm. et de syph.," 1888, tome ix, No. 2) commends the use of hypodermics of iodoform in the treatment of lupus vulgaris. The dose has not been fully determined, but 2 centigrammes a day have been used for an adult, and half that dose for a child. The excipient may be any solvent of iodoform that is not irritant to the tissues, such as liquid vaseline. Under its use the lupus tissue pales, and the tubercles sink down. Improvement has been decided in a number of cases treated by this method, but no cures are reported.

Mycosis Fungoides.—Kaposi ("Wien. med. Wochschrft.," 1888, May 12) reports a case of this disease which ended fatally. The post-mortem examination revealed a large number of nodes in the internal organs of similar form and histological peculiarities to those in the

skin. From this metastasis he draws support to his view of the disease as "sarcomatosis cutis."

The Treatment of Abnormal Epidermal Growths, such as Warts, Corns, and Callosities.—Roesen ("München. med. Wochl.," Feb. 28, 1888) has found the following procedure very efficacious in the removal of these trivial but annoying affections, viz.: The part is dampened with a solution of boric acid or salicylic acid, then covered with a thick layer of salicylic acid in crystals. This in turn is covered with a four-fold layer of borated lint, over which is placed a piece of thick gutta percha, and the whole is confined by a bandage. This is left on five days, and when removed discloses the growth shrunken, raised entirely from its base, the skin underneath being soft and showing no sign of cauterization. In very thick callosities it may be necessary either to leave the dressing on for ten days, or else renew it at the end of five days. This treatment is also applicable to onychogryphosis.

The Treatment of Keloid.—Barduzzi ("Monatshft. f. p. Dermat.," 1888, No. 8, p. 391) is skeptical of curing keloid by means of any therapeutical procedure, and has but little faith in its treatment by electrolysis. He believes that the best method is to cut the growth out by an incision far beyond its boundaries, and allow the wound to heal by granulation, without any attempt at drawing its edges together.

The Treatment of Suppurating Venereal Bubo.—During the last five years Szadek ("Vierteljschr. f. Derm. und Syph.," 1888, Heft 2, p. 209) has met with 1,084 cases of soft chancre in the military hospital of Kiew, and among these there were 274 buboes, or about one bubo to every four chancroids. The seat and virulence of the sore determined chiefly the inflammation of the glands, and this was noticed particularly with sores located on the frenum and on the inner side of the prepuce. The right inguinal glands were affected one hundred and five times, the left one hundred and thirty times, and both sides thirty-eight times. The double bubo came most frequently with the sore on the frenum; otherwise the location of the sore seemed to have little influence on the site of the bubo. The sore seemed to heal very quickly after the development of the adenitis. The following is the author's plan of treatment: If there is only swelling of the glands without fluctuation or redness of the skin, rest, and antiseptic treatment of the ulcer; if only redness, compresses of carbolic-acid solution until the abscess is ready to open. Attempts at causing the resorption of the bubo by such means as painting with iodine are of no use, the only effect being a quieting of the pain and a slower development of the abscess. Under chloroform the bubo, when ripe, is to be opened parallel to Poupart's ligament the whole of its length, strict antiseptic precautions being employed, the pus removed, and the diseased glands dug out with the finger, the remnants being scraped out with the curette. The cavity is then to be washed out with sublimate solution, powdered with iodoform, filled with iodoform gauze, and put up in impermeable dressing. The latter consists of a few layers of sublimate gauze and salicylated or sublimated wadding, then a ball of jute, then rubber (Macintosh) sheeting, and a spica bandage. This is left from two to five days as a rule, then removed, the wound edges washed out with sublimate solution, powdered with iodoform, and dressed dry. This dressing is left on from five to ten days. Usually after the second to the fifth dressing, or from the tenth to the forty-fifth day, on an average the thirtieth day, the wound is healed. Complications, excepting slight erysipelas in five cases, were not encountered in the 274 cases treated, and this was of little influence upon the course of the healing. The scars were always linear, smooth, and, after a short time, hardly perceptible.

The Use of Calomel Oil and Oleum Cinereum Hypodermically in the Treatment of Syphilis.—Bender has employed both these preparations for the hypodermic treatment of syphilis, and now ("Vrtljschr. f. Derm. u. Syph.," 1888, Heft 1, p. 55) compares their relative action. He has seen stomatitis follow the use of oleum cinereum quite as often as that of calomel oil. The duration of treatment was about the same for each. The pain caused by the oleum cinereum seemed somewhat the more severe of the two, and more or less marked infiltration always occurred. The injections were made every third day or twice a week, and only a part of a syringe-ful was injected at a time. But in private practice we are recommended to inject a whole syringe-ful every eight to fourteen days. (The strength of the mercury in the oil is twenty per cent.—that is, a cubic centimetre of the oleum cinereum contains

0.23 gramme of mercury.) Abscess occurred in one case treated by oleum cinereum, but was never met with from the calomel oil. The effect of both was prompt, and Bender has a very high opinion of the hypodermic treatment of syphilis.

Salicylate of Mercury.—Szadek ("Montshft. f. prakt. Derm.," 1888, No. 10) has been experimenting with this comparatively new preparation of mercury in the treatment of gonorrhœa and syphilis. He believes that it is no less efficacious in syphilis than the other preparations of mercury, and that when given by the mouth it is well fitted to cure mild cases. It is an excellent and active salt of mercury for intermuscular injections. Neither by the mouth nor hypodermically does it cause the least disagreeable local disturbance. It is useful as a local application to various syphilitic infiltrations and ulcerations, bringing them to absorption and cicatrization. In urethritis it acts well and promptly, but will not abort the disease. Szadek made use of the following formulas:

R Hydrarg. salicylici..... 1.0;
Extr. et pulv. glycyrrhizæ..... q. s.
Ut ft. pil. No. 60.

Sig.: From 3 to 6 pills a day soon after meals.

R Hydrarg. salicylici..... 0.2;
Mucilag. gummi arabici..... 0.3;
Aquæ destil..... 60 M.

This is for deep injections, preferably into the buttocks. Before injecting, the chosen spot is to be washed with bichloride solution. The injections are to be repeated every second or third day.

R Hydrarg. salicylici..... 0.10;
Aquæ destil..... 250;
Natri bicarbonici..... 1.0 to 1.3. M.

This is for urethral injections in gonorrhœa, to be used, in recent cases, four to five times a day.

The Abortive Treatment of Syphilis.—Jonathan Hutchinson has found that by giving small doses of mercury, preferably one grain of gray powder three times a day or oftener for six or nine months, during the time of induration of the initial lesion of syphilis, the secondary symptoms are entirely aborted, or appear in a very mild form ("Med. Press," July 29, 1888). He, therefore, is a strong believer in the specific action of the drug, but at the same time does not maintain that the tertiary stage of the disease may not appear.

Myositis Syphilitica has been found by Neumann ("Vrtljschr. f. Dermat.," 1888, Heft 1) to affect the sphincter ani more frequently than any other muscle and at an earlier stage of the disease, and to give rise to much greater pain and disturbance of function. Its symptoms are pain and tenesmus during and after defecation, which may in severe cases last for hours. The pain is aggravated by pressure from without. Women are more often subjects of the disease than men. The whole muscle is not affected; sound bundles of fibers may be found among the diseased ones. Both the blood-vessels of the perimysium and the nuclei of the sarcolemma are involved in the inflammatory process. As the affection of the sphincter may last long after the other symptoms of syphilis have disappeared, we may have to treat the contraction of the muscle and the consequent pain by sphincterotomy. In the tertiary stage of syphilis, symptoms of paralysis of the muscle are more prominent, the sphincter being incompletely closed.

The Earliest Symptoms of Hereditary Syphilis.—Based upon the statistics of the Moscow Foundling Hospital, Miller has made a study of hereditary syphilis, and now ("Jahrbch. der Kinderheil.," 1888, xxvii, Heft 4) gives us the deductions from his observations. Among 1,000 cases of congenital syphilis the various symptoms were met with in the following proportions: Papules of the skin or mucous membranes, 74 per cent.; rhagades of the lips and anus, 70 per cent.; rhinitis, 58 per cent.; ulcers of the hard palate, 52 per cent.; macules, 45 per cent.; chronic lymphadenitis, 29 per cent.; ulcers of the tongue, 27 per cent.; pemphigus, 25 per cent.; onychia and paronychia, 23 per cent.; excoriations, 20 per cent.; laryngitis, 17 per cent.; pseudoparalysis of the extremities, 7 per cent.; ulcers of the skin, 4 per cent.; gingivitis ulcerosa, 4 per cent. Most of the children were extraordinarily thin and atrophic. The umbilical stump, instead of falling off, as in healthy children, on the fourth or fifth day, does not fall till the second or third week, and inflammation of the navel is proportionally more common. The disease makes

its appearance in the first month in 64 per cent. of the cases, and in the second month in 22 per cent.; most often in the third week, then in the second and fourth week. The earliest symptoms of hereditary syphilis are rhinitis and pemphigus.

Miscellany.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for the month of June, the whole number of deaths reported was 479, including 2 from cholera morbus, 17 from cholera infantum, 8 from croup and diphtheria, 2 from cerebro-spinal meningitis, 3 from dysentery, 2 from diarrhœa, 16 from typhoid fever, 2 from malarial fever, 3 from pyæmia, 4 from whooping-cough, 5 from septicæmia, and 3 from scarlet fever.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 20th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 30th corresponded to an annual rate of 15.9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Huddersfield, viz., 12.6, and the highest in Preston, viz., 27.8 in a thousand. Small-pox caused 3 deaths in Sheffield, 11 in Preston, and 1 in Hull. Diphtheria caused 3 deaths in Leeds.

London.—One thousand two hundred and thirty-eight deaths were registered during the week, including measles, 20; scarlet fever, 19; diphtheria, 28; whooping-cough, 27; enteric fever, 10; diarrhœa and dysentery, 36; cholera and choleraic diarrhœa, 2. The deaths from all causes corresponded to an annual rate of 15.1 in a thousand. Diseases of the respiratory organs caused 156 deaths; different forms of violence, 64; and 9 suicides were registered. In greater London 1,530 deaths were registered, corresponding to an annual rate of 14.4 in a thousand of the population. In the "outer ring" 4 deaths from whooping-cough, 3 from diphtheria, and 4 from scarlet fever were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending June 30th in the sixteen principal town districts of Ireland was 23 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4.8, and the highest in Limerick, viz., 49.9 in a thousand. In Dublin 168 deaths were registered, including measles, 1; typhus, 1; whooping-cough, 4; enteric fever, 2; scarlet fever, 2; diarrhœa, 2; and dysentery, 1.

Marseilles, France.—Eight hundred and thirty-one deaths were registered during the month of June, including small-pox, 8; enteric fever, 19; scarlet fever, 2; diphtheria and croup, 36; and measles, 43.

Preston, England.—The United States consul at Liverpool, in a dispatch dated June 23d, states that "the number of cases of small-pox reported at Preston since the 10th is 72, and the number of deaths 10, making a total of 255 cases, 17 of which were fatal."

Martinique.—The United States consul, in his dispatch dated June 23d, states that "in the last fortnight there have been no cases and no deaths from small-pox at Port de France, and in the previous week there has been only 1 case of small-pox in St. Pierre. During the past week there have been no cases and no deaths at either of the above-mentioned ports, and in the whole island there have been in the past week only 282 cases and 33 deaths. The indications are that the epidemic that has prevailed here since last October will speedily die out for lack of fuel to feed on, since almost all the cases now reported are from small hamlets in the interior of the island, which are just being visited by the scourge."

Havana, Cuba.—Seventeen deaths from yellow fever are reported for the week ending July 7, 1888.

Hong-Kong, China.—The health officer at San Francisco, Cal., telegraphed under date of July 18th: "Cholera reported epidemic at Hong-

Kong." The State Department has cabled the consul at Hong-Kong to report the facts.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	June 30.	2,260,945	841	1	1	8	4	24		
Glasgow	June 30.	545,678	219			2	3	1		
Warsaw	June 23.	444,814	233			2	3	3		
Calcutta	June 2.	433,219	188	37						
Copenhagen	June 19.	300,000	122				3	5	4	
Palermo	June 30.	250,000	88			1	1	5		
Genoa	June 30.	179,519	63		1				2	
Toronto	July 7.	130,000	27			2		1		
Stuttgart	June 30.	125,510	46							
Bremen	June 23.	122,000	40							
Havre	June 30.	112,074	56		1	3	1	1		
Barmen	June 23.	109,000	47						2	
Leghorn	June 24.	101,718	49					1		
Mayence	June 16.	65,802	31					1		
Cadiz	June 30.	65,028	47							
Santiago de Cuba	June 30.	40,000	27							
Guayaquil	May 12.	35,000	61	2	3	31				
Guayaquil	May 19.	35,000	67	6	1	30				
Guayaquil	May 26.	35,000	54	1	1	24				
Callao	June 16.	34,000								
Vera Cruz	July 5.	23,800	18							
Sagua la Grande	June 30.	15,615	10		1					
Bermuda	July 10.	15,262								
Matamoras	June 30.	12,000	5							

UNITED STATES.

Ship Island Quarantine Station, Miss.—The medical officer in charge of the Marine-Hospital Service reports that the captain and 4 men died of yellow fever on the Norwegian bark *Magnolia*, on the voyage from Rio Janeiro. The vessel was bound for Pensacola, Fla., and is now undergoing quarantine at Ship Island, having been sent to that station by the Pensacola health authorities.

Buffalo, N. Y., July 17th.—The medical officer in charge of the Marine-Hospital Service reports that "small-pox has made its appearance in the Polish quarter of this city. In all, 8 cases are reported. They have been removed to the city pest-house, and measures have been taken by the health officers to prevent a spread of the disease."

Tampa, Fla., July 16th.—Two cases of yellow fever are reported, one convalescent and the other probably fatal. There are several cases at Manatee. On July 19th the Governor of Florida made application to the Secretary of the Treasury for aid to the local health authorities in suppressing the disease, and the Secretary informed the Governor that aid would be furnished through the Marine Hospital Bureau. A house inspection at the villages named will be immediately commenced.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Philadelphia, Pa.	July 14.	1,016,758	449			7		13	1	6
Baltimore, Md.	July 14.	431,879	246					1	1	1
S'n Francisco, C.	July 6.	300,000	127			2		3		3
New Orleans, La.	July 7.	248,000	120							6
Pittsburgh, Pa.	July 14.	230,000	97					1		1
Cleveland, Ohio.	June 23.	225,000	70							4
Cleveland, Ohio.	June 30.	225,000	71							1
Washington, D. C.	July 14.	218,000	120					1		1
Richmond, Va.	July 14.	63,600	42							
Charleston, S. C.	July 14.	60,145	50					1		1
Mobile, Ala.	July 7.	29,132	22							
Mobile, Ala.	July 14.	29,132	24							

California Wines.—In a letter, dated July 18, 1888, addressed to the California Vintage Company, of No. 21 Park Place, New York, Dr. L. Wolff, demonstrator of chemistry at the Jefferson Medical College, of Philadelphia, says:

"The case of your wines, sent to me for analysis by Dr. A. L. Hummel, of the 'Annals of Hygiene,' containing specimens of your La Rosa Zinfandel, Mataro, Riesling, Royal Tokay, and Royal Grape Brandy, has been duly received, and I have examined them for the common contaminants of wine—to wit, sulphurous acid and sulphites, salicylic acid, fuchsin, lead salts, etc.—none of which I found present therein. I have

also examined their alcoholic strength, extractives, and ashes, and found them to correspond strictly in this respect with the standard of pure and natural wines, which can not be said of many of the imported wines. As a native of a wine-producing country I consider myself somewhat of a judge of wines, and regard your products as comparing more than favorably with most of the wines from abroad, which are sold for higher prices, so much so that I inclose within my order for fifty bottles of La Rosa Zinfandel, which I expect to use hereafter exclusively at my table."

Some months ago we wrote in commendation of the California Vintage Company's Royal Grape Brandy, and we are glad to record Dr. Wolff's account of his analyses of that product and of the wines mentioned.

ANSWERS TO CORRESPONDENTS.

No. 208.—The *médecine blanche* is a mixture of 8 parts of calcined magnesia, 40 parts of water, 50 of powdered sugar, and 20 of orange-flower water.

No. 209.—The account is undoubtedly trustworthy.

No. 210.—Chewing the leaves is said to annul the sense of taste temporarily.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE RELATION OF
THE ANIMAL ALKALOIDS TO DISEASE.*By E. D. FERGUSON, M.D.,
TROY, N. Y.

THE full significance or the main utility of a discovery is not realized at once; in fact, the first conceptions often are notably at variance with the later conclusions. That the discoveries of Franklin, Galvani, and their contemporaries should have been followed by the belief that the main advantages to be derived from their labors were protection from lightning and some marvelous benefits in the treatment of disease was quite natural, but electricity in more modern harness does its great work in a multitude of ways of which the scientists of the last century could form no conception. Much that was then deemed possible or valuable has proved impossible or of no value. Electricity is not the *vital force*, nor can it be made to give or restore life, as was once hoped; nevertheless it has, in a multitude of ways, become of great use to us in our living.

The rapid survey that is now possible of the probable applications and utility of any discovery has in a measure changed the slow development and application of discoveries or new processes, but so much—probably the greater part—of science being yet unknown should make us modest still in our statements as to the probable value of our novel notions or new facts.

The domain of biology and organic chemistry has been so often and so recently widened and lengthened that of necessity there is a certain indefiniteness in the boundaries between the earlier territory and the more recent acquisitions, and it is not unnatural that a certain amount of contention should arise as to the size and value of some of these additions to the domain.

For some time the views of the bacteriologists relative to the causation of disease were regarded with contempt, with amusement, with curiosity, or with incredulity, until finally the evidence on certain lines became so overwhelming as to demonstrate the importance and even necessity of the presence of certain micro-organisms in the development of some diseases.

When doubt and disbelief had been thus overcome by proof, it was but natural that instances of credulous confidence in the new faith should arise, and the new champions were sometimes hardly prepared for a philosophical consideration of the problems constantly arising.

When the discovery of substances known as ptomaines was made, a changed line of thought was possible, and therefore the banner of a new camp was soon floating, bearing the statement that the animal alkaloids were the more direct causes of diseased action, and that bacteria were only operative in being factors in the genesis of these poisons. The

course of any controversy at all protracted is, sooner or later, marked by a *personal* element, and the battle between the *bacteria* and *ptomaines* is no exception to the general rule. This seems to have been notably true in France, though it may be hardly fair to express opinions as to the motives of acts which occur at such a distance where the participants are not personally known by the critic, but some of the recent discussions in the *Académie de médecine* have been characterized by a degree of warmth greater than naturally belongs to the statement of the results of experimental and clinical observation. The novelty as well as the definiteness of the statements made challenges our attention, and, since such recognized authorities as Aitken, Lauder Brunton, and others, have seriously considered and apparently accepted the conclusions of the new school of solidists, we can overlook the enthusiasm of some of the advocates, and pause to see whether it is true that in this new department of organic chemistry "investigating minds may very profitably bestow on it a share of the attention they have hitherto directed so exclusively to bacterial and bacillar biologies."

The purpose of my paper is a review of the evidence relating to these recently discovered sources of disease, and I hope to discharge that purpose without partisan enthusiasm or bias, with a feeling that the subject deserves a respectful hearing and careful consideration at our hands, though it may not prove true that "pangermism has been exhausting its energies in sensational demonstrations of bacterial surprises and bacillar blunderings."

When, in 1817, Sertürner, of Eimbeck, in Hannover, succeeded in calling the attention of the profession to morphine, which had been discovered by him (and by at least one other person some years previous to that date), a new era was marked in practical medicine. This first alkaloid was followed by others, until at the present time the list of those for sale by Merck is confusing by reason of their number, and each year—almost each week—is adding to the length of the list.

For some time it was supposed that these substances held a special position in the chemical world, and that their elaboration could only occur in the changes wrought upon proteid substances in the cells of plants; but, while the wit of man bids fair to compete in the production of vegetable alkaloids by means of synthetical chemistry, a new line of analogous substances has recently been discovered in the bodies of animals, including man. As these new alkaloids were at first supposed to result from changes connected with putrefaction, the name ptomaine—from *πτῶμα*, a dead body—was applied to them as a class. The general and probably necessary association of bacterial life with the development and progress of putrefaction might render it questionable as to whether, after all, the ptomaines were not virtually of the same origin as the vegetable alkaloids in being the result of the cell activities of these minute vegetable organisms; but the discovery of similar substances in the secretions of living animals, and in the tissues of healthy animals recently killed, renders it extremely probable that the unorganized ferments, ptyalin, pepsin, and pancreatin,

* Read at the fourth annual meeting of the Second District Branch of the New York State Medical Association, held at Troy, June 26, 1888.

or the processes of disassimilation connected with the discharge of the functions of the animal organism, were competent to generate these compounds without the intervention of micro-organisms. The alkaloids found in the secretions of living animals, or in the tissues (such as the muscles) of animals recently killed, were denominated leucomaines—from *λεύκωμα*, the white of an egg—probably in recognition of an essential relationship to the proteid substances.

To those of us who learned the old chemistry, and have been unable from sundry reasons to follow closely the progress made in that department of science, the chemical terminology and symbols of recent date are bewildering, the words being of German complexity in structure and Russian unpronounceability of form. When we find a ptomaine defined as "the cyclical nucleus of a proteid molecule that has undergone complete destruction in the process of putrefaction," we are confused; though we may form a conception of a "cyclical nucleus" as the constant quantity in the structure of a group of related substances, it is difficult to understand how even a ptomaine can remain when the proteid molecule has undergone complete destruction.

The discovery of the animal alkaloids is a matter of comparatively recent history. Alexander Marcet, of London and Geneva, discovered xanthine in 1819. This was followed in due time by the discovery of other bases, such as that of creatinine by Liebig in 1849, but their alkaloidal nature was not prominently recognized. The poisonous properties of dead bodies undergoing putrefaction was a fact of very ancient observation, but it was not till this century that a rational effort was possible to detect the special toxic substances. In 1822 Gaspard and Stick detected a poisonous principle in extracts from cadavers, and in 1856 Panum found in putrid matters an active poison which was neither an albuminoid (?) nor an alkaloid. A considerable amount of work was then given to the question of toxic agents of animal origin, but no basis for a scientific pursuit of the subject existed. It is probably true, as stated by Brown in his recent treatise on the subject, that until within a few years the detection of alkaloidal reactions would have been considered as conclusive evidence of the presence of a vegetable alkaloid, but the time came for a positive advance, and this finally occurred in a way that at once attracted the attention of those in the profession interested in chemical or medico-legal researches. About 1870 or 1871 an Italian physician, Selmi, of Bologna, in examining a body supposed to contain poison, found alkaloidal reactions which he could not ascribe to any of the known alkaloids, and he finally suspected that the changes following death might result in the production of such substances. He then undertook a systematic investigation, which resulted in the discovery of the cadaveric alkaloids, which were consequently named by him ptomaines. His discoveries became the subject of an investigation by a special commission, appointed by the Italian Government, but the main idea so far had relation to the medico-legal aspect of the question, that injustice might not be done in the conclusion that poison had been administered because the reaction of alkaloids had been found.

Contemporaneously with the work of Selmi, Arnaud Gautier, of Paris, had undertaken quite a full investigation

of the subject from a chemical and physiological standpoint, and to his labors, together with those of Brieger, of Berlin, we owe much of the positive knowledge we possess relative to ptomaines and leucomaines, the latter being discovered and named by Gautier. The literature of the subject is already quite large, but it is mainly in the German or French languages, or scattered notes in the medical journals.

It would be of no value to present a list of all the alkaloids so far discovered in living animals and cadavers, for they are not all toxic. I will therefore select those which have been shown to possess poisonous properties, and after their enumeration it will be my object to consider their probable relation to disease.

First, we must note the classification into

1. Ptomaines or cadaveric alkaloids, the result of bacterial life.
2. Leucomaines or vital alkaloids, which are in some way the product of tissue metamorphosis, during the functional activities of the body.

The ptomaines and leucomaines are definite chemical compounds, and can be isolated and studied in their chemical relations, individual properties, and physiological effects. It was found that toxic effects could be produced when no alkaloids could be isolated; hence the class

3. Extractives, which are now the unknown quantity in the chemistry of these poisons; and from the fact that extremely poisonous effects can be obtained from these extractives, it is to be hoped that their chemistry may become more tractable.

It is proper to note that the processes for the isolation of the alkaloids are somewhat tedious, and occasionally moderately complex, but it is fair to assume that the bases pre-exist in the substances examined and are not the creatures of the chemical manipulations.

The solvents mainly used for the separation are ether, chloroform, and alcohol, and the respective solubility of the alkaloids in these agents has served as a basis for a classification.

An important question relates to the finding of leucomaines in the flesh of healthy animals recently killed—as to whether these alkaloids are the products of the ordinary processes of the body, or whether they result from a bacterial agency which may constantly be present in the body, notably in the intestinal tract. The problem does not seem to be demonstrable on either side, but, in view of the fact that albuminoid substances are constantly undergoing change in the body, and that analogous products, such as urea, do not require the idea of an intervention of micro-organisms in their production, it is not unfair to assume that the ordinary bio-chemical forces of the living animal are competent for the formation of leucomaines. It is even possible that some of the alkaloids found after death had an existence during life, and that some of the ptomaines are in reality leucomaines. As a matter of fact, some of the alkaloids are quite permanent—so much so that they endure through the entire process of putrefaction, and have been termed by Gautier pyridic bases.

The ptomaines have been classified as oxygenous and

non-oxygenous, according as oxygen enters or does not enter into their composition. The leucomaines have been divided into the uric group, the creatinine group, and the unclassified group. The *poisonous* ptomaines, so far as I have been able to ascertain, are:

Hydrocollidine,	Choline,
Methylguanidine,	Muscarine,
Mydaleine,	Several unnamed bases,
Neurine,	The ptomaine extractives.
Mydatoxine,	

The leucomaines, irrespective of their poisonous properties, are:

Betaine,	Pseudoxanthine,
Kamine,	Creatinine,
Adenine,	Crusocreatinine,
Guanine,	Xanthocreatinine,
Sarkine, or hypoxanthine,	Amphicreatinine.
Xanthine,	

The foregoing belong to the uric and creatinine groups of leucomaines. Other alkaloids, known as the unclassified group, are found in the urine, the blood, the spleen, the intestines, the saliva, the milk, the venom of certain snakes and batrachians, and in mollusks and fishes. The tyrotoxicon found in milk and cheese by our countryman, Vaughan, of Ann Arbor, Mich., is specially interesting. Mytilotoxine, found in mollusks, is also of special interest. Another alkaloid of the leucomaine series, obtained from patients afflicted with tetanus, and therefore named tetanine, has recently been added to the list, and I presume there are others of which I have no information.

We come now to a consideration of the physiological, or rather the toxic, effects of these substances, and for that purpose we will take them up in the order just given, with the preface that the effects noted were generally the result of experiments on animals. Hydrocollidine in a bird produced "vomiting, inco-ordination, paralysis, convulsions, death." Methylguanidine is highly poisonous, its symptoms being similar to the effects of atropine and curara. Mydaleine "excites profuse diarrhœa, vomiting, enteritis—death with the heart in diastole." Its effects on the pupil and the circulation are similar to those of atropine. Neurine poisoning is manifested by "abundant secretions, diarrhœa, accelerated respirations, and convulsions before death." Brieger, in his demonstrations of the action of some of the ptomaines before the German Surgical Congress in Berlin on April 5, 1888, showed that after the injection of neurine in a rabbit there occurred "first a flow of thick mucus from the nose, then profuse salivation appeared, and later the animal suffered from dyspnœa, became paralyzed, and died in convulsions." Mydatoxine has a similar train of symptoms to those of neurine. Choline: I have been unable to find statements concerning the symptoms of poisoning by this agent, except that it can be administered in large (?) doses, when its effects are similar to those of muscarine. Muscarine is highly toxic and causes a "loss of muscular contractility to the electrical stimulus," but salivation, vomiting, and purging are also among its effects. This alkaloid is taken as the type of a group in which the symptoms of poisoning have a certain similarity to the effects of the poi-

sonous mushrooms, or the calabar bean, and in contrast with those alkaloids having an atropine-like influence.

There remain a few ptomaines of moderate toxic power that I have not named, and some unnamed bases of decided poisonous qualities; and then there still remain the "extractives"—substances that elude the efforts of the chemist to isolate or crystallize, and yet, from their intensely poisonous properties, they are of great importance. As individual properties can not be assigned to them, they remain a great "danger in the dark"—the *x*, *y*, and *z*'s of some of our ætiological problems.

The toxic effects of the leucomaines can not be considered in the same manner that we have reviewed those of the ptomaines, for the evidence is still quite incomplete. This is owing to their recent discovery and the limited supply to be secured for experimental purposes.

Some of the creatinine group are asserted by Gautier to be toxic, even in small amounts. This is notably the case with xanthocreatinine. The more prominent effects observed are lassitude, sleepiness, vomiting, and purgation.

Xanthine, in the uric group, is said to be toxic, but I can find no authentic statements relative to its symptomatology.

Mytilotoxine, found in diseased mussels, was discovered by Brieger, and he recently demonstrated its effects before the congress of German surgeons. An animal poisoned by it had head-drop, dyspnœa, convulsions, and paralysis. When given to a man ill with tetanus it caused a relaxation of the clonic spasms, but did not so act in animals. The analogy of this agent to curara is manifest, and its administration in disease is the first use of the animal alkaloids in practical medicine of which I am cognizant.

Other members of the non-seriate group, including the extractives, are poisonous. That from the spleen produces collapse and death with the heart in systole. It is difficult to decide whether to classify the intestinal products with the ptomaines or the leucomaines, for, micro-organisms being invariably present in the intestinal canal from a period soon after birth, it is impossible to assume or exclude bacillary influence in the production of these alkaloids or extractives. The subject is under investigation, but it can only be stated that poisonous products are to be found in the intestines.

A curious observation by Bouchard indicates that "the day urine affords a narcotic, sedative principle; the night urine, on the contrary, is marked by a stimulant, convulsivant principle." This is suggestive of an influence on the animal organism through excretion or retention of material elaborated in the body, analogous to what are termed medicinal effects, such as the production of sleep. Is the hypnotic of the future to come from the dissecting-room rather than the field or the chemical laboratory? Gautier found that an extract with alkaloidal reactions, taken from the saliva of a man, produced an intense stupor in a bird, the stupor lasting for several hours.

The venom of snakes has a certain analogy to the salivary secretion of mammals, but the chemistry is yet undetermined. The probability at present lies in favor of the toxic principle being extractive rather than alkaloidal, but the fact that a temperature of 125° C. (257° F.) will not

destroy the venom is evidence that the toxicity does not depend on an organic ferment or bacterium.

We will now consider the animal alkaloids as causes of disease, it being understood for the present that the term alkaloids may, for convenience, include the extractives. This inquiry may be pursued under three divisions, viz.:

1. The facts relative to the proved causative action.
2. The classes of diseases in which it is fair to assume that a causative relation exists.
3. Diseases in which the evidence to date would render it improbable that a causative relation exists.

It is necessary to define our idea of causation in this connection in order to avoid confusion. It is now an accepted conclusion that the cadaveric or putrefactive alkaloids are the result of bacterial life, and, in view of the fact that there is no conceivable process by which a ptomaine can add to its own quantity, it is not probable that a ptomaine could be the sole cause of a protracted and uniformly progressive malady.

This progressive or developmental character would favor the idea that the cause continued to generate its kind or to develop new properties, and this being possible through the presence of bacteria in a proper cultivation medium, we can then consider the bacteria the *cause* and the alkaloids the *agent* in the production of the disease.

It seems to me proper and natural to regard bacteria as the cause in case the alkaloid is the result of microbial action, and this action is continuous or protracted and occurs within the body of the patient. On the other hand, if the alkaloid is received into the body from a source of production existing without, and received either in a single dose or in repeated doses, then the ptomaine becomes the cause of the disease.

If poisonous leucomaines can be generated within the living organism by ordinary bio-chemical processes, either in unusual quantity or the quantity becoming relatively great through defective elimination, then leucomaines may become the cause of disease. If, on the other hand, the development of the leucomaines should be shown to depend upon bacteria existing and operating within the body, then bacteria should be considered as the causative agents.

There may be, and doubtless are, many cases in which bacteria and their resulting ptomaines are simultaneously introduced, and then neither can be assumed to be the special cause of the resulting disease, unless one is shown to be competent to produce the morbid phenomena without the coincident presence of the other at the time of the infection.

Dr. William H. Welch, in his recent "Cartwright Lectures on the General Pathology of Fevers," relates experiments where he injected *sterilized* cultivations of the typhoid bacillus into rabbits and found that "small quantities . . . produce no effects; somewhat larger amounts cause a rise in temperature without other marked symptoms; still larger quantities produce increased temperature, diarrhoea, and other manifest symptoms of severe illness, but the animal may recover; relatively large amounts are followed by fall of temperature, grave illness, and death."

This subnormal temperature may receive a note here. It seems to me that rather hasty generalizations have been

made relative to the effect of the alkaloids on bodily temperature.

It has been asserted that "poisoning by the extractives is attended by hyperthermia; poisoning by the animal alkaloids is accompanied by hypothermia; a combination or succession of hyperthermic and hypothermic phenomena may become manifest according to the combination or alternation of poisoning by the deleterious physiological products or their antagonistic action" (Aitken "On the Animal Alkaloids," p. 15).

Dr. Welch's experiments, as well as other evidence, indicate that these conclusions are not warranted. He says: "I have also obtained results similar to those of Sirotinin, who inoculated two rabbits with the same amount of a typhoid culture. In one rabbit fever developed, and the animal recovered; in the other the temperature fell after the injection, and the animal died." Speculation as to the cause of this varying effect where like identical experiments are made on similar animals is so far without practical value. To ascribe it to idiosyncrasy is as far as we can go. We certainly are not warranted in ascribing hyperthermia or hypothermia to a class of substances having a certain relationship in origin or chemical constitution.

To recur to our threefold division of the relation of the alkaloids to disease.

First, the instances in which there has been a demonstrated causative relationship are not numerous, at least so far as individual diseases are concerned. In some cases, however, the presumption is so strong as to leave no reasonable ground for doubt.

The substance known as tyrotoxin or cheese poison is undoubtedly the cause of a sickness which had been known long prior to the discovery of the alkaloid. The symptoms following its administration—dryness and constriction of the throat, nausea, vomiting, and diarrhoea—correspond to the symptoms of "cheese sickness."

Tetanine and an analogous alkaloid were discovered by Brieger in cultivations of an anaerobic bacillus found in the soil, and in cultivations of a bacillus from the wound of a man who died of tetanus. There is now no doubt that tetanine will produce tetanus in animals. Brieger recently demonstrated it in a rabbit before the German Surgical Congress.

It does not seem to me that the evidence so far presented will justify the opinion that either cholera or typhoid fever depends on an animal alkaloid rather than on bacteria, though it is contended that such is the case.

There can be no reasonable doubt that mytilotoxine is the cause of "mollusk poisoning," and the fact that Brieger obtained this alkaloid from fresh mussels is an important fact relating to the question of the production of leucomaines as contrasted with ptomaines.

Salamandrine, extracted from the poisonous secretion of the salamander, has the same effect as the secretion—*i. e.*, anxiety, trembling, convulsions, opisthotonus, and death—as was demonstrated by its discoverer, Zalesky.

The poisonous properties of certain sausages is undoubtedly due to a ptomaine, though the evidence is not conclusive as to its alkaloidal nature.

As to the second division of cases—those in which it is probable that an alkaloid has an ætiological relationship—there is a large field for investigation and legitimate speculation. Leaving aside the problem presented by typhoid fever, cholera, etc., the idea of poisoning by leucomaines gives a simpler and more probable explanation of the origin of such diseases as rheumatism, gout, some neuralgias, etc. The condition known as uræmia may readily be ascribed to such a causation, and the same may be said of diabetic coma and probably sunstroke.

The languor often associated with the process of digestion and those symptoms known as “biliousness” may yet find their explanation in the development of a leucomaine in the intestinal tract or in accessory organs, and the *eliminating* effect of a purgative would therefore have a more rational basis, and might even justify the use of cathartics in so grave a disorder as peritonitis when that disease presumably depended on the presence of alkaloids in the intestines.

This division of the subject is pregnant with great possibilities and even probabilities connected with “the medicine of the future.”

The third division, in which we were to consider the diseases that did not owe their origin to animal alkaloids, needs only a brief consideration. While some alkaloidal diseases, such as “sausage poisoning,” may have a considerable duration, it is probable that protracted maladies—diseases that have a developmental period, a period of gradual rise, a stationary period, and then a gradual decline—owe their origin to some specific and *reproductive* agency. The only exception to this lies in the possibility of a disturbance in the physiological processes whereby the body will generate within itself the leucomaines, and that this generative process may be continued for a considerable period of time.

A great deal has been alleged for the ptomaines, but the enthusiasm of scientists is often like that of the soldier—it only sees the city to be captured, and victory is the object of the campaign. The desire to have the cause we champion prevail is a quite general and natural feeling.

Our present, and probably our future, classification of diseases will contain many, probably a large majority, not directly resulting from animal alkaloids, but a review of the work already done shows that an important field has been opened, and the harvest already gathered surpasses in value that indicated at the dramatic heralding of the work in the Court at Rome, when it was proved by Selmi that the death of General Gibbone was probably not due to poisoning by his servant, who was charged with the crime and liable to be convicted by the testimony of two chemists, who professed to have found *delphinine*, but Selmi demonstrated their error by showing the same reactions with ptomaines which he had discovered.

While the discovery of the animal alkaloids has added somewhat to the difficulties of the chemico-medical expert, there is a compensation in making clearer some of the problems of practical medicine, but, as a cause of disease in any true sense of the term, the discovery of these substances can not as yet be considered so important an advance as the recent demonstrations of *contagia viva*.

RECENT ADVANCES IN THE DISINFECTION OF DWELLINGS AS ILLUSTRATED BY THE BERLIN RULES.

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SINCE the beginning of the present decade the practical study of infectious agents, with a view to their control and destruction, has taken two different directions. Pasteur and his pupils have been preoccupied with investigations concerning preventive inoculation which is to protect the animal body in the event of an invasion of pathogenetic micro-organisms against their multiplication, and consequently against the outbreak of the disease. Koch and his school, on the other hand, heeding but slightly the experiments of the French, and placing little value upon the practical results obtained, have directed their attention toward the successful extermination of disease-germs outside of the body. Their laborious researches have placed the whole matter of disinfection on a basis more secure than it has ever been on before, from which, most probably, it will not be shaken by whatever information future researches may bring to light. More recently there has been manifested great activity on the part of the French also, and in fact among most European states, concerning the subject of disinfection, not only as applied to hospitals, but also to infectious diseases occurring among the inhabitants of cities, towns, and smaller communities.

In the disinfection of sick-rooms in private dwellings, as well as in hospitals, we have to deal not only with the walls of the room, but with its contents, usually of such a varied character. This problem, therefore, requires the application of different modes of disinfection, since manifestly all the objects can not be exposed to the same treatment. The ripe fruit of the painstaking work of R. Koch and others in this field is now before us in the shape of a small pamphlet,* issued by the authorities of the city of Berlin, and known as the ordinance of February 7, 1887. This gives directions with reference to disinfection during and after infectious diseases as it is to be carried out in the infected dwellings of the city. As the contents of this pamphlet have not yet been brought prominently into notice in this country, it seems desirable to give them very briefly, together with a few remarks illustrating the gradual crystallization of the rules there laid down.

The ordinance divides infectious diseases into two classes (given below, § 2). For the first, disinfection is made obligatory. For the second, it may be enforced at the discretion of the police authorities. Failure to obey the rules laid down is punishable by a fine of thirty marks or less and the cost of disinfection. The directions for disinfection are given clearly and explicitly. The most important are translated literally in the following summary :

* “Anweisung zum Desinfectionsverfahren bei Volkskrankheiten.” Amtliche Ausgabe. Berlin, 1887. A. W. Hayns Erben. Pp. 14. See, also, “Deutsche Vierteljahrsschrift f. öffentliche Gesundheitspflege,” xix, 1887, 144, for the same rules, with explanatory remarks by M. Pistor.

§ 1. The object of disinfection is to prevent the spread of infectious diseases by destroying or making innocuous infectious germs.

§ 2. Infectious diseases are divided for this purpose into two classes:

a. Those which absolutely require disinfection: 1, Asiatic cholera; 2, small-pox (genuine and modified); 3, typhus and relapsing fever; 4, diphtheria.

b. Those for which disinfection may be made obligatory upon a special order, but for which it is urgently recommended: 5, Typhoid fever; 6, scarlatina; 7, epidemic dysentery; 8, measles; 9, whooping-cough; 10, phthisis (*Lungenschwind-sucht*).

§ 3. Disinfection consists in

1. Scrupulous cleanliness of the patient, his living and dead surroundings, the sick-room and its entire contents.

2. Abundant and frequent renewal of air in the sick-room.

3. Immediate removal and destruction of infectious matter and useless articles.

Process of Disinfection.—§ 5. 1. For the maintenance of cleanliness, the patient must undergo daily ablution; there should be frequent—daily, if possible—change of clothing and bedding; immediate removal of soiled linen and daily cleansing of the sick-chamber with moist cloths, which should be placed immediately after use in boiling water for half an hour.

2. Ventilation of the occupied chamber is accomplished by the frequent and prolonged opening of windows and of the stove, heated *from within*; when the weather is cold, the open window should be covered by a curtain.

3. For the destruction of infectious matter are used:

a. Streaming, superheated steam in the disinfection establishments erected by the city of Berlin.

b. Boiling in water for half an hour.

c. A 5-per-cent. solution of carbolic acid.

d. A 2-per-cent. solution of carbolic acid (the method of preparation is also given).

e. Burning of worthless articles.

§ 6. Recommends the isolation of the sick-room and forbids the subsequent removal of any articles therefrom, unless disinfected. All linen, cloths used to wipe objects in the room, should not be shaken, but placed immediately in a 2-per-cent. solution of carbolic acid for twenty-four hours, then boiled for half an hour in water, and washed in a solution of soap containing twenty grammes of potash (black or green) soap to ten litres of water.

§ 7. All excretions in cholera, typhoid, diphtheria, scarlatina, and dysentery are received into vessels one fourth full of 5-per-cent. carbolic acid. These are emptied into (water) closets.

Under this section are included:

In cholera, vomited matter, dejections, and urine.

In diphtheria and scarlatina, expectoration, nasal mucus, and urine.

In all forms of typhus fevers and in epidemic dysentery, the stools.

Water-closets should not be used by the sick. Should they have been used, however, the seats and hoppers should be scrubbed with a 5-per-cent. solution of carbolic acid, and the latter rinsed with three to four litres of the same solution.

§ 8. Food and drink must not be kept in the sick-room, nor consumed there by any one save the patient.

§ 9. Soiled bandages must be burned immediately; instruments cleaned in a 5-per-cent. solution of carbolic acid.

§ 10. Bad odors should be removed solely by removing their source and by frequent airing. Perfumes simply conceal, but neither remove odors nor disinfect.

§ 11. At the close of the disease, all articles which can not

be washed—such as clothing, bedding, pillows, spreads, silk goods, carpets, furs, upholstered articles without external veneering—are *very cautiously* (*i. e.*, without shaking or beating them) tied up in a linen cloth moistened with a 2-per-cent. solution of carbolic acid, and sent to one of the municipal disinfecting stations in their wagons. Soiled leather (shoes) must be disinfected with 5-per-cent. solution of carbolic acid.

§ 12. Refers to the burning of worthless material (bed-straw, clothing, etc.) in the kitchen stove, upon which there must be no food at the time. More bulky material is to be disposed of by the disinfecting station.*

§ 13. Polished and carved furniture, pictures, metallic articles, and works of art are to be rubbed carefully with dry cloths, papered as well as painted walls carefully with dry bread after the floor has been thoroughly moistened with a 5-per-cent. solution of carbolic acid.

Those places on the walls which have been soiled by expectoration, etc., are to be moistened with a 5-per-cent. solution of carbolic acid and carefully scraped.

All floors, without exception, doors, windows, as well as all wood-work without polish, are to be thoroughly scrubbed with a 5-per-cent. solution of carbolic acid after cholera, small-pox, diphtheria, typhus, and relapsing fever. The disinfectant should be allowed to penetrate the cracks in the floor, and the whole finally washed with clear water.

The bread used in rubbing off the walls, and the cloths, are burned; or, if still useful, they are treated according to § 6.

§ 14. Prescribes, lastly, the airing of the disinfected rooms for twenty-four hours after cholera, diphtheria, small-pox, typhus and relapsing fever.

§ 15. Forbids the use of public conveyances for those infected with any of the eight first diseases of § 2, and calls attention to conveyances specially set apart for such patients.

§ 16. Convalescents before associating with others must first take a warm soap bath, or, if this is impossible, the whole body must be thoroughly cleansed with soap and water, and only those garments put on which have not been used during the illness, or which have been disinfected.

§ 17. The bodies of those who have died of cholera, small-pox, diphtheria, dysentery, or typhus fever must be wrapped, *without being washed*, in a cloth saturated with a 5-per-cent. solution of carbolic acid before being placed in the coffin, and speedily removed to some building for the reception of the dead previous to their interment (*Leichenhalle*).

§ 18. Prescribes that all who have come in contact with patients affected with cholera, small-pox, diphtheria, scarlatina, typhus and relapsing fever should immediately after wash their hands in a 2-per-cent. solution of carbolic acid. Nurses should carefully cleanse face, beard, and hair. It also prescribes that disinfectors must wear a special suit of clothing during their work, and that they, as well as nurses, must, when the work is done, change their entire dress.

§ 19. The directions included in §§ 13 to 18 are carried out in those cases also (§ 2, *b*) in which disinfection is conducted under a special order of the authorities.

§ 20. If disinfection has not been prescribed in typhoid, scarlatina, or dysentery, it is to take place, as with measles, whooping-cough, and phthisis, at the discretion of the physician.

To these instructions is appended an announcement with reference to their execution by specially appointed disin-

* This rule seems to me an objectionable one, as it permits infected articles to be dragged through the house, and very likely more or less scattered before they are burnt up. All useless, suspected material should be disposed of by the stations.

factors. It regulates their compensation, and prescribes the penalty in case of neglect or carelessness.

These rules are of interest to us in formulating for the first time the most advanced methods of disinfection as applied to dwelling-places which had hitherto not received very much attention in this respect. It is not left in the hands and at the discretion of the attending physician, but is made compulsory. The attention of the public is thus forcibly directed to them, and they become common property. The whole subject in this aspect must, nevertheless, be considered an experiment, for the carrying out of which we must be thankful to the sanitary authorities of Berlin. There are some paragraphs in these rules which may seem quite superfluous to us. But we must bear in mind that they are intended to reach the lower classes, and therefore the simplest methods are not only stated in the simplest language, but certain facts concerning cleanliness, presumably familiar to all intelligent people, are inserted as of the utmost importance, being in themselves measures of disinfection.

It is of interest to trace in the various publications of experiments on disinfectants since 1881 the gradual development of these rules through their numerous intermediate stages, which have had their day, and to note how slowly but surely the reliable means of disinfection have been narrowed down to a few.

First, as to the room itself. Naturally a gaseous agent suggested itself to the earlier investigators *—one that might penetrate into all the minute hidden recesses and crevices not readily accessible to liquids. Sulphur dioxide or burning sulphur was found inadequate, owing to its very feeble germicide properties. Chlorine, also employed for a time, was found unsatisfactory, in spite of its high disinfectant power in combination with moisture, on account of its feeble penetrating capacity. It was unable to kill bacteria loosely wrapped in a coat-pocket. It also ruined wearing apparel. Finally, it was difficult to make a room sufficiently tight to prevent the premature dissipation of the gas. Gaseous substances have, therefore, been given up entirely.

Subsequent investigations † aimed at the utilization of some powerful disinfectant in solution which was to be sprayed upon the bounding surfaces of the room. Mercuric chloride in a $\frac{1}{10}$ -per-cent. solution was tried and found effective. But it was impossible for sanitarians to shut their eyes to the fact that there was a large quantity of a highly poisonous substance left in the room. Efforts were made to rid the walls of the mercuric chloride by spraying them subsequently with sodium carbonate, which forms an insoluble oxychloride of mercury. This is readily swept from the walls as a crystalline powder. But the poisonous nature of the corrosive sublimate has prevented its extended application, and carbolic acid, as we have seen, has superseded it in the Berlin rules. Esmarch, ‡ in a painstaking investiga-

tion, determined the curious fact that if walls were simply rubbed with bread, all the adherent germs were caught on the bread. This simple procedure was found even superior to washing the walls with a 5-per-cent. solution of carbolic acid or a $\frac{1}{10}$ -per-cent. solution of mercuric chloride, and has therefore been recommended in the rules.

There are other objections to the use of mercuric chloride, such as the formation of precipitates with albuminous substances, rendering it partly inert. Where such objections may be disregarded, it still holds an important place as one of the most powerful germicides. In the disinfection of the holds of vessels it has been recommended by the Prussian Government on the basis of experiments made by Koch,* and its application carefully formulated.†

Perhaps the so-called crude carbolic acid—a dark, thick liquid said to contain about 25 per cent. of phenol—may in part replace the expensive pure acid now in use. Laplace, ‡ in endeavoring to utilize this liquid, found that it failed to dissolve in water. When, however, an equal volume of sulphuric acid was added to it, the mixture became soluble, and a 4-per-cent. solution was found superior to a 5-per-cent. solution of pure carbolic acid in its action on anthrax spores. Before its true place can be determined it will require testing in various directions. In using it, it is well to bear in mind that on the one hand sulphuric acid is in itself a powerful germicide, and on the other it may be corrosive with reference to certain articles. The cheapness of crude carbolic acid § will make it a welcome addition to the list of available disinfectants.

In a recent order the Prussian Government has recognized its value in recommending it together with ordinary lime as a disinfectant in combating the unsanitary condition produced in dwellings by floods in the eastern provinces. Liborius || had demonstrated the efficiency of slaked or powdered lime in destroying typhoid and cholera bacilli, the amount required depending upon the quantity of albuminous and other organic matter present. I have been able to fully confirm his results upon another microbe not producing spores. When organic matter is absent these bacteria are destroyed in lime-water diluted to one fourth its strength (about .03 per cent.). When large quantities of albuminous matter are present, as much as from 4 to 5 per cent. may be necessary. Whitewash as ordinarily used is much more concentrated than this, however. Lime will therefore prove a very valuable agent in disinfecting the surface of the soil, and in the form of whitewash for the poorer classes. That it will not destroy spores does not materially diminish its value, since a pathogenetic spore incrustated with carbonate of calcium and fixed to the walls of a room is not likely to create further mischief. More attention should, therefore, be paid by sanitarians to the use of lime in preference to wall-paper for the poorer classes, owing to this very germicide and fixing power.

* See "Mittheilungen a. d. kaiserlichen Gesundheitsamte," i, ii, *passim*.
† Guttman, P., "Ueber Desinfection von Wohnungen," "Arch. f. path. Anatomie," etc., cvii, 1887, p. 459. Krupin, "Ueber Desinfection von Wohnräumen," "Zeitschr. f. Hygiene," iii, 1887, p. 219.
‡ "Der Keimgehalt d. Wände u. ihre Desinfection," "Zeitschr. f. Hygiene," ii, 1887, p. 491.

* "Arbeiten a. d. kaiserlichen Gesundheitsamte," i, 1886, p. 199.
† "Anleitung z. Desinfection u. z. Desodorisation S. M. Schiffe u. Fahrzeuge." Berlin: Mittler u. Sohn.
‡ "Deutsche medicinische Wochenschrift," 1888, p. 121.
§ Quoted at ninety cents a gallon.
|| "Zeitschrift f. Hygiene," ii, 1887, p. 15.

Passing from the room to its contents, the objects needing sterilization most urgently are bedding and clothing, since they are most liable to contain the infectious elements. The discussion as to the best means of destroying them brings up the very important problem of disinfection by heat. It has been shown by Koch and others that dry, hot air is to be rejected, since it penetrates very slowly into large bundles. The high temperature (140° C.) required, together with the long exposure (several hours), is apt to permanently injure the exposed objects. Moist heat was next tried and found very efficient in the form of steam at 100° C., such as escapes from boiling water under the ordinary atmospheric pressure. Steam under increased pressure in a closed boiler was found to suffer in part under the same disadvantage which had been observed in connection with dry heated air—that is, the slowness with which the heat penetrates into the interior of large bundles.

Disinfecting boilers are now being constructed* which utilize the principle of streaming, slightly superheated steam freely escaping from a small opening in the upper portion of the disinfecting boiler. An exposure varying from one to two hours is usually sufficient for complete disinfection. In these the steam is formed, in a separate boiler, under a pressure of about three atmospheres. Geneste Herscher & Co., of Paris, have constructed a slightly different disinfecting apparatus which bids fair to outrank the former. It is used throughout France, as well as in other European states. It utilizes steam under pressure, thereby giving an internal temperature of 110° to 115° C. In order to obviate the objections which have been made to the use of steam under pressure, the latter is discharged once or twice during the process of disinfection until the temperature falls to 100° C. All the residual air inclosed in the interior of bundles, mattresses, etc., is thereby driven out and replaced by steam. Salomonsen† and Levison have recently subjected this apparatus to a very rigorous test, making use of the spores of *Bacillus subtilis* and various earth bacilli as test objects. They found a period of twenty minutes sufficient for the destruction of all spores, provided the steam was exhausted twice. There are thus in active use three forms of apparatus: 1. The simplest‡ using streaming steam from boiling water. 2. Those using streaming superheated steam from a separate boiler (Berlin). 3. Those using steam under pressure with the means of exhausting (Paris).

There has also been a slight change in views as to what should constitute thorough disinfection. In the earlier experiments Koch suggested that disinfection should not be considered complete unless the most resistant spore-forms known had been destroyed. Since then several species of bacilli have been studied whose spores display such a remarkable power of resistance to boiling water that they are only destroyed after an immersion lasting from three to five hours.* It is now coming to be accepted that an ex-

posure which destroys the most resistant pathogenetic forms known, such as anthrax spores, is sufficient. This modification is timely in view of the fact that the great resistance of the earth-bacilli spores would make disinfection on a large scale practically impossible. Moreover, none of the many pathogenetic bacteria which have been described within the past few years exceed the resisting power of anthrax spores, while very few may be considered equal to it, such as the spores of malignant œdema and *charbon symptomatique* among animal diseases, and tuberculosis.

ON THE ANATOMY AND PHYSIOLOGY OF GLANDS.

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I.

MORPHOLOGIC anatomy has not demonstrated the union in a metameric chain—for instance, like that of the forty-three pairs of nerves—of the eleven pairs of great glands of the body, the ceruminous, lacrymal, thymus, thyreoid, pulmonary, salivary, hepatico-pancreatic, urinary, spermatie, ovarie, and mammary; yet comparative anatomy and comparative embryology,* by proving that the liver and pancreas form a pair and that the lungs are glands, have given us the missing links for such a chain.

General physiology, which shows that the function of the muscular system is motion, has not yet clearly exhibited the one great function of this glandular chain in the acts of production and egestion—acts opposed to those of construction and ingestion,† which acts constitute the function of the intestinal and circulatory systems, yet histology and comparative physiology have furnished us with ample data for making this generalization.‡

Glands are pouches or inversions formed either in the external or the intestinal skin, exoderm or endoderm. Wiedersheim has demonstrated and shows in a schema very clearly a complete chain of intestinal glands all of which appear to be homologous and all of which are inversions of the vertebrate intestine. These are the salivaries, the thymus and thyreoid glands, the lungs, and the liver and pancreas, which are exhibited as two halves of a whole, two antimers of a pair, like the pair of lungs or the pair of kidneys. This is the intestinal glandular system. The spleen does not come into the scheme, as it is not an intestinal development, but belongs to the lymphatic system. The stomach is, of course, not a gland, being an enlargement of the intestine and not an inversion.

In the works of Gegenbaur, Wiedersheim, Jeffrey Bell, Balfour, and Haeckel we find gathered from many sources the long and curious history of another glandular system, the urogenital.*

* By O. Schimmel & Co., Chemnitz, Saxony, and used in the disinfection establishments of the city of Berlin.

† "Versuche mit verschiedenen Desinfectionsapparaten," "Zeitschrift f. Hygiene," iv, 1888, p. 94.

‡ Esmarch, "Der Henneberg'sche Desinfector," *l. c.*, ii, 1887, p. 342.

* Globig, "Zeitschrift f. Hygiene," iii, 1887, p. 322.

* Wiedersheim, "Comparative Anatomy of Vertebrates." Balfour, "Comparative Embryology."

† "Egestion is as necessary as ingestion."—Marshall Hall.

‡ Jeffrey Bell, "Comparative Anatomy and Physiology." The lungs and kidneys are classed as purifying organs.

* The "Urogenital System," Gegenbaur, "Anatomie des Menschen."

This can not be called an intestinal system, nor yet is it cutaneous, but of mixed, double, perhaps of triple or quadruple origin. The kidneys are cutaneous inversions, being formed at an early embryonic stage by inpushings of the epiblast. The testes originate in low forms from the exoderm, the ovaries from the endoderm. In the vertebrate embryo they appear to rise from the mesoblast, from the parietal and visceral *cœloma* epithelium.* The whole urogenital system in higher forms in the completed stage seems to be located centrally between the "vascular plate" and the "flesh-plate"—that is, between the muscular system and the sanguiferous system—thus suggesting to the mind a central glandular system much as the cerebro-spinal axis suggests a central nervous system.

This central glandular chain of three links—kidneys, testes, ovaries—is in the completed stage anatomically united to the intestinal chain of five links—the salivary, thymus, thyreoid, pulmonary, and hepatico-pancreatic pairs—by that great epithelial expanse, the mucous membrane. Over this expanse are disseminated the thousand and one smaller glands, follicles, or glandules, *œsophageal*, bronchial, gastric, intestinal, uterine, vaginal glands of Brunner, Lieberkühn, Tyson, Cowper, Bartholin, Littre—all so insignificant as only to be borne in mind by the names of their discoverers, yet all being parts of this effusive intestinal whole.

There remain the glands of the exterior. Here the skin is the substratum, as the mucous membrane is for the interior. It is covered, like the mucous membrane, with crypts, follicles, or glandules innumerable, sudoriparous and sebaceous. At three points they become exaggerated into large glands—at the aural and orbital cavities and in the pectoral region. The lacrymal glands are sunk deepest, and have become united to the mucous tract and to the intestinal chain of Wiedersheim. Embryology shows their cutaneous origin. The ceruminous glands seem attempting the same inward path, but they fail to make the connection; being separated from the mucous membrane by the tympanum, they remain cutaneous. The mammaræ, which are merely enlarged sebaceous glands, also remain true to their cutaneous origin, and in function may be regarded as an annex of the urogenital or central glandular system.

Whatever their origin, whatever their difference of form, whatever their special function, the visible fact remains that the eleven pairs of glands form a long connected chain, connected for the most part by the mucous tissue, entirely connected by epithelial tissue, either mucous or cutaneous. This whole glandular chain—formed by the intestinal glandular system shown by Wiedersheim and the central glandular system or urogenital system of Gegenbaur, together with the ceruminous and mammary glands, which are cutaneous, and the lacrymal gland of mucous connection, but of cutaneous origin—is placed in and upon the body, hung upon the body, as it were, in a circle, passing from the vertex downward and inward, then outward and upward again toward the vertex. It passes from the exterior to the deepest interior, then out again to the very exterior. The ceruminous pair is exterior and exodermic; the lacrymal of

exodermic origin, endodermic function; the next five, endodermic; the next three (kidneys, testes, ovaries), still deeper, are mesodermic or central; then the chain emerges again, and the mammaræ, which in function are an extension of the urogenital system, are exodermic, similar to the ceruminous; and it may be remembered that these terminal glands of the chain, the mammaræ, are enlarged sebaceous glands, and the ceruminous, the initiative link of the chain, are enlarged sudoriparous glands. Thus one might imagine that both kinds of small skin glands had been developed and attached, one at each end of the mucous chain.

II.

It is proper for special physiology, looking at the concrete phenomena, to describe successively the five functions of the vegetative life—digestion, circulation, respiration, excretion, and reproduction; but it is also proper for general physiology to note that all processes of the vegetative life may be reduced to two: ingestion and egestion—a putting something into the organism, and a drawing or thrusting something out of it.

Throughout the interminable series of complicated apparatus and chains of systems composing the vegetative-life structure two forms of organs may be discerned and two only: fibrous and cellular vessels and glands. A set of long fibrous tubes, of a caliber growing ever smaller and smaller, beginning with the mouth, pharynx, and gullet, and ending only with the capillaries, are forever injecting nourishment into the tissues, pouring into them the life-stream. A set of cell-lined pouches or dermal inversions are forever drawing off matter from the life-stream, generating in their cellular meshes products foreign to the organism, and by their ejaculatory ducts tending to cast forth these products.

In this whirlpool of ingestion and egestion, of infusion and effusion, not all the products are thrown out; some few, notably the saliva, the gastric juice, and portions of the bile are again drawn into the vortex, but the amount of secretion is insignificant as compared to the amount of excretion, if under the latter term are included all products that leave the body.

Digestion is partly ingestive and partly egestive, respiration is ingestive and egestive, circulation is ingestive by the arteries; excretion and reproduction are egestive.

This seems to be the general truth: the intestinal system (mouth cavity, gullet, stomach, and small intestine), together with the lymphatic system and the circulatory system, form a complete ingestive organization, the end of which is the growth or construction of the body. On the other hand, the salivary glands, the lungs, the liver, the kidneys, the ovaries and testes, together with the large intestine as an egestive duct, work all in one direction and with one result—production—the forming of the various substances or products. The glands form an egestive or effusive organization.

We may easily trace out the course of the constructive or ingestive line. The intestinal cavities constitute the first section; the mouth, pharynx, gullet, stomach, and small intestine, or aliment, chyme, and chyle vessels. The lacteals

* For the bibliography, etc., upon this point, see Balfour, "Comparative Embryology."

and the thoracic duct form the second, the lymph vessels; the third portion being made up of the blood-vessels—all this forms an interminable line of fibrous and elastic injection-tubes, a system of working in nutriment. On the other hand, diametrically opposed to this tubular or vascular system, we have the pouched, or invaginated, glandular system. The salivaries and the liver with its pancreas form an upper and lower pair of intestinal inversions and secrete ferments. The lungs above and the kidneys below form another set of pairs—the purifying glands.*

The lungs are intestinal inversions and excrete carboniferous matter; the kidneys are of cutaneous origin and excrete nitrogenous matter. One is said to purify the blood, the other takes off the effete products of muscle, etc.; thus the one tends to purify the vegetative life, the other to purify the animal life. An important pair of glands above—the lacrymal—are sense-accessory and moved to excessive secretion by painful sensation or emotion. An important set of glands below—the reproductive—generate or secrete germs, and are excited to extraordinary action by voluptuous sensation and by the tender emotion. Of the two remaining pairs—ceruminous at one end of the chain, mammaræ at the other—the first is insignificant; the other, morphologically opposed to the uterus,† bears its part in the genital mechanism, the special functions of which are ovulation, menstruation, fertilization, gestation, parturition, lactation, all of which are a part of the one general function of secretion, or production and effusion.

The existence of a glandular “organ-system,” if fairly demonstrated, as now seems likely, will be a truth of importance to gynecologists, neurologists, dermatologists, alienists, and all who are interested in the finer portions of the human anatomy. Bain and the psychologists have long maintained that there is such a thing as a temperament or constitution “emotional on the whole,” and that the physical basis of emotion is gland. That there is a glandular temperament or constitution, as there is a nervous and a muscular, appears certain, and recent anatomy seems to give the doctrine a lasting foundation in the intestinal and urogenital glandular systems.

ABDOMINAL SECTION IN EXTRA-UTERINE PREGNANCY.‡

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ABOUT ten years ago I read a paper to the Kentucky State Medical Society on Cæsarean section, in which I incidentally alluded to extra-uterine pregnancy, suggesting that the sac might be separated from its attachments and safely removed by the proper application of ligatures. I had not then seen a similar suggestion, though probably the opera-

tion had been recommended many years before, by Kiwisch in 1857, and by Stephen Rogers in 1867. In the criticism by my colleagues the operation was severely condemned, because it was not believed that the sac could be safely removed after this or any other fashion. But experience has demonstrated that the sac of an extra-uterine tubal pregnancy in the early months may be removed about as easily as an ovarian, tubal, or any other form of pelvic cyst. In fact, in nearly every instance the sac may be removed, and hæmorrhage controlled by the proper use of the ligature. The same may usually be done in advanced pregnancy, where the tube has ruptured and allowed the conception to develop in the folds of a broad ligament, if we separate adhesions carefully and ligate large bleeding surfaces, or the broad ligaments *en masse*, instead of attempting to ligate separate bleeding points on the placental site. By this means we control primary hæmorrhage and avoid the danger of secondary hæmorrhage when the placenta is finally separated in those cases where it is left *in situ*; we also avoid decomposition in the peritoneal cavity of the placenta and sac, which would probably result in peritonitis, septicæmia, hectic, exhaustion, etc. The objection that the placenta may be so attached to the abdominal walls, uterus, intestines, or other structures as to prevent its removal, is more theoretical than practical, for such attachments are by no means common in operations or in post-mortem examinations. However, if the sac and its contents can not be removed without incurring the risk of fatal hæmorrhage, they may be left behind, and the sac partially resected and stitched in the abdominal wound, with a drainage-tube in the lower angle of the incision. Or, after resecting part of the sac, we may stitch the edges together, and drain its cavity by a tube passed to the vagina through the retro-uterine pouch, thus shutting off a large portion of the sac from the peritoneal cavity. This gives drainage from the most dependent part of the sac, and admits of the entire closure of the abdominal wound, so as to get union by first intention. We may also drain through both abdomen and vagina, thereby being permitted to wash out the cavity of the sac.

The former results of efforts to remove the placenta in operations in advanced pregnancy have been so discouraging as to induce many writers, including Thomas, Barnes, Hicks, Kœberlé, and others to urge that it be left behind, lest the woman die of hæmorrhage. But, if the placenta is left attached, the patient may have secondary hæmorrhage, for the organ may retain its blood relations with the maternal structures, and continue to grow. Depaul reports a case of fatal hæmorrhage where he removed a placenta four months after the death of the fœtus, while Schröder removed a placenta, without the use of ligatures, three weeks after the death of the fœtus, with no untoward symptoms. It will certainly not be questioned that the placenta should be removed where it is possible to do so without incurring the imminent risk of fatal hæmorrhage, which it now seems is possible to do; for, if the placenta is retained, the woman's life is in jeopardy, and she may die of secondary hæmorrhage and shock, or from suppuration of the membranes, septicæmia, peritonitis, or exhaustion. The relative frequency of secondary hæmor-

* Jeffrey Bell.

† Burdach's "Physiology."

‡ Read in the Section in Obstetrics and Diseases of Women, American Medical Association, at Cincinnati, May, 1888.

rhage after spontaneous separation of the placenta, compared with that caused by forcible separation, is as one to five where ligatures are not used. Were the diagnosis possible in the early weeks of pregnancy, before rupture of the sac, or before hæmorrhage into the peritoneal cavity from rupture of superficial vessels of the sac, the tube and its contents could so easily be removed that the propriety of doing so would be conceded by any one who prefers abdominal section to electricity. The results should be excellent, for the woman could be more carefully prepared for the operation, and, in the absence of the hæmorrhage and shock which usually follow rupture of the cyst, the prognosis should be as favorable as after the removal of a small ovarian or tubal cyst.

I find but one case on record where the operation was performed before rupture, or partial rupture, of the tube, and before the fourth month of gestation. In this case the patient was successfully operated upon by Dr. Joseph Price, September 11, 1887, but he was not positive in his diagnosis until he opened the abdomen. Nearly all American gynecologists recommend destroying the fœtus by electricity if the diagnosis can be made before the fifth month of gestation and before hæmorrhage from rupture of vessels of the sac. The special advocates of this treatment are Thomas, Mundé, Lusk, and Garrigues, of New York, and Mann, of Buffalo, all of whom report excellent results; but all the cases treated may not have been tubal pregnancy, for there are few, if any, cases recorded where the diagnosis was positive before the end of the third month, with the sac and its superficial vessels intact; nor do I believe such a case can be diagnosed with absolute certainty unless the membranes expelled are proved to be decidua by a microscopical examination, which can not be done except by an experienced microscopist. Neither the subjective nor the objective symptoms are pathognomonic; the same rational and physical signs are observed in other cysts, tumors, or deposits in the pelvis. At best we can only come to a probable conclusion of extra-uterine pregnancy; and I believe that in some of the reported successful cases following the use of electricity the women were suffering with some other form of pelvic trouble. Lawson Tait, who has operated for extra-uterine pregnancy more than any one else, has never seen a case until the sac had ruptured. So, if this difficulty in diagnosis is usual with the experienced gynecologist, it is hardly probable that the average general practitioner or surgeon could make a correct diagnosis. The use of electricity in other forms of pelvic tumors or deposits may be followed by a rapid decrease in the size of such tumors or deposits, and a decided improvement in the local and general symptoms, the result of a healthful stimulation or of the electrolytic effect of the galvanic current.

But, conceding that we may sometimes diagnosticate tubal pregnancy in the early months, before rupture of the sac or rupture of vessels on the surface of the sac, then I maintain that abdominal section is preferable to electricity. If the child is killed, the sac, with its contents, is left in the pelvis as a foreign body, and may cause serious, or even fatal, complications. The placenta may con-

tinue to grow, and the woman may have secondary hæmorrhage or peritonitis, or fall into a state of chronic invalidism, so that finally an abdominal section will be necessary after the formation of adhesions, which will complicate the operation. Until recently the results of the surgical treatment in extra-uterine pregnancy were not encouraging; neither were the results in ovariectomy for many years; but Tait has reported thirty-six operations for rupture of the cyst within the last three years, with but two deaths, and Martin has operated nine times consecutively, with but one death. Tait's first death occurred before he had perfected the technique of the operation, and in his last case the patient was in such profound shock when he operated that she was unable to rally.

I will not consume your time in discussing the thirty-three cases where the fœtus was removed through the vagina, for the operation is so unsurgical and the results are so bad that I can hardly imagine a case where it would be preferable to abdominal section.

LACTIC ACID AND DIET IN INFANTILE DIARRHŒA.

BY FRANK WHITFIELD SHAW, M. D.,
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LESS than two years ago Hayem, of Paris, presented to the Academy of Medicine in that city a report on the use of lactic acid in the green diarrhœa of children. In the preparation of this work he had been assisted by his interne, Lesage, whose particular share in it had been the development of some pure gelatin cultivations of a germ which Hayem had discovered as being present in the vomited and rectal discharges of this variety of diarrhœa. He said he had established beyond the possibility of a doubt, by clinical experiment, the direct relation of this germ to the green color, and as such he claimed for it the right of discovery.

However, soon after his report was published this claim was contested by Damaschino, who said that, three years before, he had discovered this same microbe, had shown its relation to green diarrhœa, and had presented to the Biological Society some micro-photographs of it.

Hayem admitted his priority to the microscopical discovery, but still claimed as his own the credit for showing the proper relation of the bacillus to the particular form of diarrhœa. He stated that Damaschino had gone no further than merely to recognize the germ, and then cited the experiments which Lesage had made of introducing into the intestinal tract of healthy animals some pure cultivations, and producing by them a characteristic green diarrhœa. He also showed that the discharges were contagious.

The microbes, which are rod-shaped and can exist only in an alkaline medium, show a disposition to bunch themselves into groups, and their number is in direct relation to the severity of the attack.

These are, therefore, the first successful attempts to establish the parasitic origin of at least one form of diarrhœa, as probably also they are the first efforts to treat the disorder according to germicidal methods. Since then, in this coun-

try, that attention has not been given to the experiments which the conclusions would seem to warrant.

It was my privilege, soon after the report of Hayem was published, to have an opportunity of testing clinically in dispensary work the statements made by him. After using the acid in the green form of diarrhœa for a short time the suggestion presented itself of trying the effect of it in all the varieties of diarrhœa without reference to the color of the stools. This idea of the universal application of germicides to diarrhœa was strengthened by the paper, a few months later, of Dr. William D. Booker, read before the International Medical Congress at Washington, on the different forms of bacteria found in the discharges of summer diarrhœa. He stated that twelve varieties had been isolated, eleven being bacilli and one belonging to the variety cocci. He gave their action on milk as follows: "Some coagulated milk with acid reaction and evolution of gas; one caused coagulation with alkaline reaction; one gave the milk a peptonized appearance; and other varieties caused no perceptible change."

On account of its simplicity as well as its elegance, the employment of this universal acid treatment was a very easy one, and the results were such as to leave no doubt as to its usefulness. The trial began during the summer of 1887 and has been continued during the present summer, over one hundred patients receiving the treatment.

The age of the patients varied from ten weeks to twenty-four months, and there was great variety in the severity. The stools, which ranged from three to twenty daily, presented all the varieties found in the different forms of diarrhœa. They were the watery-mucous, the yellow with coagulated casein, the slightly greenish with mucus, casein, and sometimes blood, and the distinctly green. In very few cases of the green diarrhœa so treated was there failure to afford some relief, and many of the recoveries were certainly remarkable. But, while the trial confirmed the conclusions of Hayem as to green diarrhœa, it also established the usefulness of the acid in the other varieties.

The significant features in support of lactic acid are these: It not only relieves the diarrhœa, but it also acts beneficially for the vomiting, fever, and restlessness. It changes also the very offensive odor of the stools.

The vomiting is controlled within a few hours so completely that the child can begin to take nourishment, and, although it may subsequently occur at intervals, a continuance of the treatment soon stops it. Again, the fever which attends every case of any severity is reduced by it. To not a single child in the one hundred cases was any antipyretic given, the fever usually subsiding before the diarrhœa had fully stopped. Attending the reduction of temperature there was shown a disposition to sleep, and the intestinal pain, which was often severe, received no other medication than the acid. To none of them was opium given in any form.

Within a period varying from twelve to seventy-two hours the discharges would begin to change, the greenish becoming less watery and assuming a yellow color, while the watery-yellow and sometimes bloody had a greater consistence without the unpleasant odor.

The general results have been so satisfactory that all astringent and alkaline remedies have been abandoned, lactic acid alone now being given, no matter what variety of diarrhœa presents itself.

But, as the children so treated came largely from the tenement-houses, where crowding, heat, poor ventilation, and improper food are important factors, it was found advisable to adopt some form of dietetic measures in connection with the acid. In a monograph on the treatment of the diseases of children, read by Dr. Jacobi in 1879, a valuable suggestion is given concerning the feeding of children. The frequency of diarrhœa in children fed wholly on breast milk had already presented itself, and for a considerable time it had seemed contrary to reason to so continue feeding, although good authorities advised, whenever possible, to insist upon a diet wholly of breast milk. This was done, and the results were no better, while in children somewhat older, who had begun to take other foods, there was usually a benefit when these were alternated with mother's milk. An exclusive diet, either of breast milk or prepared food, did not seem to give good results, and the question was not satisfactorily answered until the method employed by Dr. Jacobi was tried. In his monograph he states that even normal mother's milk contains fat that is not digested, and that when diarrhœa occurs, if lumps are found in the passages, they are not wholly undigested casein, but, on the contrary, are mostly fat, and probably remnants of intestinal epithelium. These fats are olein, margarin, and stearin. Fatty acid in abundance is a common cause of derangement of digestion and assimilation, and it impedes the normal secretion of other digestive fluids.

He then quotes the conclusions of Wegscheider concerning the fat in breast milk: "Fat can not be completely absorbed; one part leaves the intestines in a saponified condition; a second part as free fatty acid; a third as fat in an unchanged condition." From this he concludes that one precaution to observe is to guard against food too rich in fat. As the mother's milk is best when it can be tolerated, he endeavors to make this possible by diluting it with some liquid farinaceous food. To do this, he suggests preceding the nursing by one or two teaspoonfuls of barley-water. Instead, however, of the barley-water, some of the prepared foods were tried according to this principle and the results were beneficial, due, probably, to the small percentage of fat which they have been shown to contain. There was less troublesome casein to act as an intestinal irritant, and, when they were taken in connection with the lactic acid, recovery was usually speedy. This dietetic precaution has been adopted, and is recommended, whenever practicable, in either variety of exclusive diet.

The size and frequency of the dose of lactic acid varies entirely with the age of the patient and with the number of discharges. A two-per-cent. solution is usually ordered. The following is the formula advised by Dr. Hayem:

℞ Pure lactic acid..... 3 ss.;
Syrup..... ʒj;
Water..... ʒiij. M.

Each drachm of the solution contains about one drop of pure lactic acid.

For a child under twelve months, half a teaspoonful every hour is sufficient. If the discharges are very frequent, a teaspoonful may be given every hour for six doses, changing then to half a teaspoonful. For over twelve months a teaspoonful every hour is the ordinary dose. Dr. Hayem recommends its use one day after the diarrhoea has stopped. The large doses at first suggested in the report do not appear to be necessary, and there is danger, if it is given in larger quantities, of causing irritation of the buccal mucous membrane. It is best to dilute even these small doses, as otherwise there is a decided acid taste, not unpleasant, however.

Other germicides have been suggested and tried, such as salicylate of sodium and naphthaline, but lactic acid, while possessing all the curative properties of the others, has additional advantages:

1. It is more palatable than salicylate of sodium or naphthaline, more readily tolerated, and simpler to administer.
2. It controls vomiting and permits the earlier use of food.
3. Under it, temperature is reduced and intestinal pain quieted.
4. Restlessness is overcome and sleep rendered possible without the use of opiates.

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LETTER FROM PARIS.

Saccharin.—*The Influence of the Tunica Vaginalis Testis on the Formation of Spermatozooids.*—*Tobacco as a Cause of Abortion.*—*A Point in the Hypodermic Use of Alkaloids.*—*The Carduus Marianus in the Treatment of Hemorrhoidal Affections.*—*The Operation of Trephining.*—*Reverdin's Antiseptic Soap.*—*An American Lady Doctor to Marry an Agrégé.*

PARIS, July 20, 1888.

SACCHARIN has come into considerable notice in Paris of late. M. Dujardin-Beaumetz has condemned it as a food, stating that it passes through the body unchanged; and the city authorities are taking action, by raising the tax upon the product, to prevent confectioners, syrup manufacturers, and others from using its sweetening power to aid in imposing innutritious substances on the public as articles of food. M. Constantin Paul, the well-known physician to the Lariboisière Hospital, has lately studied the substance, and concludes that it is not toxic; at least seventy-five grains of it were given daily for a month, without the slightest bad effects being noticed. As to its action in diabetes, M. Paul has given it for five months at a time and seen no dyspeptic troubles arise. A number of experiments were made with digestive mixtures, and it was found that on adding saccharin to the mass, in the case of pork-fibrin and white of egg, digestion, to a certain extent, was prevented, but it did not entirely stop it. It was also seen that it favored other fermentations, such as that in milk. In any case, there seems to be no good reason for stopping its use by such diabetics as bear it well, and therefore they need not be deprived of a means of making their drinks palatable, such as this drug af-

fords. Saccharin is also an excellent antiputrefactive agent; in the proportion of 1 to 200 it will prevent the ammoniacal fermentation of urine; and, finally, it would appear to be a good antiseptic, stopping the development of *Bacterium termo* in solutions of 1 to 200, and at 1 to 500 arresting the growth of *Staphylococcus pyogenes aureus*. At 1 to 300 it hinders the growth of the streptococcus of puerperal fever, but it does not entirely prevent it. It is also an excellent antiseptic dentifrice. M. Paul prepared six-per-cent. alkaline solutions of saccharin, which could be colored and flavored as desired, a teaspoonful of which to half a glass of water is enough to destroy the *Bacterium termo* of the mouth. The same excellent qualities make it useful in cancer of the stomach and in other stomach affections when *lavage* is indicated. In all the putrefactive dyspepsias, in dilatation of the stomach, and whenever it may be desired to give an antiseptic drink, it can be ordered in the agreeable form of the saccharin solutions. The only defect it seems to have as an antiseptic is that it does not act on the typhoid-fever bacillus, and can not replace naphthol for intestinal antiseptics; but, on the other hand, as it is eliminated by the kidneys, its antiseptic properties can be made use of in pyelonephritis and in chronic purulent cystitis, also, in place of boric acid, for washing out the bladder. So that, in some respects, the recent outcry against this substance is without reason, as it seems to possess some excellent qualities which will retain it in use, even if it is found necessary to limit its use in alimentation.

The Paris Surgical Society has been discussing the effect of obliteration of the tunica vaginalis on the production of spermatozoa. Dr. Reclus said that, in regard to spermatogenesis, different opinions had been held. Gosselin had written that the seminiferous substance would no longer produce spermatozooids if the vaginal coat of the testicle was obliterated. But M. Reclus, after a careful examination of over three hundred testicles, had found that this was not true, as he had found the spermatozooids present in nearly all cases. In some of these cases the sheath was not completely gone. Practically, there does not seem to be any risk of a loss of sexual power, or rather of procreative ability, when the serous membrane of the testicle is injured or partly destroyed. This has an important practical bearing, owing to the frequent performance of Volkmann's operation for hydrocele, in which an antiseptic incision is made and part or all of the vaginal sheath is resected. The constant and rapid success with this operation has brought it into great favor. While it appears from M. Reclus's researches that obliteration of the cavity of the tunica vaginalis has no effect on spermatogenesis, still any wound of the epididymis would seem to result in a default of healthy sperm; and here again the operation by incision has advantages over the old method of puncture and injection, which often causes inflammation of the epididymis and puts an end to the production of spermatozooids.

Fresh evidence of the fact that working in tobacco may cause abortion has just been seen here in the case of a woman employed in the great government cigar factory. She had been engaged there for some eleven years, and during the last three years had had one abortion and two deliveries, before the eighth month, of infants that presented signs of maceration of some weeks' duration. There was no syphilis in either herself or her husband, and nicotine must have been the cause, as she had healthy children after leaving the tobacco factory. Dr. Quinquaud has reported a case of the same kind.

The rapidity of the absorption of alkaloids by the subcutaneous tissue is not at all well known, and M. Chouppe has been making some interesting studies in regard to this matter. It is of the utmost importance that we should know the exact

dose of drugs that we use by hypodermic methods. From the experiments made it is certain that, when the usual doses of the different alkaloids, dissolved in equal amounts of liquid, are injected, they act with quite a difference as to the time it takes to produce an effect on the general circulation. Morphine, for instance, takes as much as from six to seven minutes to produce its sedative action, while apomorphine acts in four minutes. Some of these facts are well known, but it is very important that we should know more exactly than we do the precise time it takes to produce the therapeutic effect of all the alkaloids given hypodermically; so that we may not fall into the rather common error of giving fresh doses before the one first given has had time to act.

Dr. Tripier has published an interesting study of visceral varices. He has found that quite a number of patients who had varicose veins and hæmorrhoids, as well as varicocele, had also visceral troubles, of the uterus, ovary, liver, bladder, etc. His clinical analyses have led him to think that there was a state of fluxion of these organs similar to that shown in hæmorrhoidal attacks. Dr. Tripier's treatment in such states includes the use of a remedy which, while it has long been known, has hardly ever been used in just this way. It is the *Carduus marianus*, or the common milk-thistle or lady's-thistle, an herb that was formerly used as a bitter tonic. It is not the same plant as the *Carduus altilis*, which was known in ancient medicine as the *Cynara hæmorrhoidalis*, and was supposed to prevent hæmorrhoids because certain insects by biting the plant caused a red tumor to appear on it. Rademacker advised the *Carduus marianus* in congestive states of the liver some time ago; and this led M. Tripier to try it in these painful hæmorrhoidal lesions of the viscera. He uses an alcoholic tincture, and gives from twenty to twenty-five drops, in a glass of water, to be drunk during the day, a part before each meal. He also uses it in ointments and suppositories, and adds it to aloetic pills in the same cases.

Trephining is again much in vogue, after its long retirement, owing to two causes: First, the great aid obtained from the antiseptic method, which deprives the operation of all its previous dangers; and, second, our increased knowledge of cerebral localization, which serves as a guide in the operation and gives it exactness. M. Lucas-Championnière and other French surgeons have been getting some excellent results from the operation as now performed. From the discussions at different surgical societies it would seem that it is well, however, to abstain from this operation when dealing with a gunshot wound; for, while one may succeed in getting the ball out, there may be left behind quite a series of lesions. But when there is a neoplasm giving rise to all the phenomena necessary for an exact localization, and showing that the lesion has its seat in a limited portion of the cerebral substance only, one may operate with a good chance of complete success.

Professor Reverdin gives the following formula of an antiseptic soap that is quite soft to the hands, cleansing and disinfecting them without causing any irritation:

Sweet-almond-oil.....	72 parts;
Soda lye.....	24 "
Potash lye.....	12 "
Sulphocarbolate of zinc....	2 "
Essence of rose.....	9 "

I spoke in a former letter of the fact that the only lady who had ever succeeded in reaching the position of house surgeon (*interne*), that much-coveted place, in France, was an American lady, Miss Augusta Klumpke, of San Francisco. I have now to announce that she is about to be married to Professor (*agrégé*) J. Jules Déjérine, of the Faculty of Paris. They are both practicing medicine in Paris.

THE

NEW YORK MEDICAL JOURNAL,

*A Weekly Review of Medicine.*Published by
D. APPLETON & Co.Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 4, 1888.

THE BLOOD-PLATES AND THEIR RELATION TO THROMBOSIS.

MUCH time has been devoted during the last few years to the study of the blood-plates, their nature and function and their relation to thrombosis. As a part of the study, the structure of thrombi, especially white thrombi, and the method of their formation, have received much attention. The researches of Zahn, Bizzozero, Hayem, Lubnitzky, Weigert, Eberth and Schimmelbusch, Löwit, Hanau, Welch, and many others have done much to advance our knowledge on this subject. In an address entitled "The Structure of White Thrombi," delivered before the Pathological Society of Philadelphia in 1887, Dr. Welch, of Baltimore, gave an excellent *résumé* of the investigations made up to that time, and reported the results of some original observations. At the beginning of this year Eberth and Schimmelbusch published a monograph entitled "Die Thrombosis nach Versuchen und Leichenbefunden," and in a recent number of the "Fortschritte der Medicin" there is an article by Löwit concerning "Blutplättchen und Thrombose." The views of Virchow were generally accepted in regard to the structure of thrombi until Zahn's investigation published in 1876. Zahn emphasized the differences existing between red and white thrombi, the former, he said, not differing from an ordinary coagulum, while the latter originated from clumps of white corpuscles. He thought that the white corpuscles which accumulated at points in the vessels where the walls had been subjected to injury rapidly disintegrated into a mass of granular matter, which he considered to be granular fibrin. The first opposition to Zahn's views came from Hayem. He attempted to prove that the hæmatoblasts, or blood-plates, were the cause of the coagulation of fibrin. Arterial thrombi, according to Hayem, were composed of blood-plates. Bizzozero subsequently confirmed and extended Hayem's observations. Lubnitzky, in 1885, reported some investigations from which it was argued that arterial thrombi were composed primarily of blood-plates. In 1885 Eberth and Schimmelbusch detailed some very careful observations on the structure of thrombi and the method of their formation. They denied that the plates played any part in the coagulation of fibrin, and maintained that when the plates were placed under unnatural conditions they rapidly underwent a viscous metamorphosis. The peculiarity in this change consisted in an increase in the adhesiveness of the plates, shown by their sticking to each other and to foreign matters. These writers observed the formation of thrombi in living animals, chiefly in the mesenteric vessels of dogs, produced by various mechanical and chemical injuries. In many instances they observed the blood-plates collecting at the point of injury, where the plates, because of this viscous metamorphosis, became ad-

herent to each other and to the wall of the vessel. In this way plugs were formed, which sometimes were washed away, but sometimes resulted in completely obstructing the vessel. Occasionally red and white corpuscles were included in the mass of plates, but this was to be considered as accidental. From these observations Eberth and Schimmelbusch concluded that white thrombi were at first composed of blood-plates, and the chief factors in their formation were an injury to the wall of the vessel, or a slowing of the current, and then the viscous metamorphosis of the blood-plates. These observers further found in the microscopical investigation of thrombi produced mechanically that there was no fibrin present, but in those formed around a foreign body introduced into the lumen of a blood-vessel, and in those produced by cauterization of the vessel-walls, they detected some fibrin. In some later observations on the formation of thrombi in the mesenteric vessels of frogs they found that fusiform corpuscles, which they regarded as corresponding to the mammalian blood-plates, were the main constituents of thrombi produced artificially in those animals. They regarded this form of thrombosis as a conglutination of plates that pre-existed in the blood, and not as a coagulation. They denied that the formation of fibrin was in any way dependent on these blood-plates, or that they were transformed into a substance resembling fibrin. They therefore denied that a white thrombus was primarily a coagulum, as had before been generally believed. In this their investigations were opposed to those of Hayem, Bizzozero, and Lubnitzky.

Numerous writers have already opposed these views of Eberth and Schimmelbusch's, considering the process of thrombosis as a conglutination of blood-plates that have undergone viscous metamorphosis. Hanau maintains that thrombi never have a viscid consistence, and Weigert points out that human white thrombi are very rich in fibrillated fibrin. He is unable to identify these anatomical thrombi with the experimental thrombi of Eberth and Schimmelbusch, and argues that, till some reconciliation is effected between the two, we should continue to base our conception of the nature of thrombi on the study of the anatomical thrombi. Eberth and Schimmelbusch reply that their studies have been directed to the earliest stages, whereas the thrombi examined by Weigert belonged to a subsequent metamorphosis.

Welch has shown that in the formation of a thrombus the first elements to accumulate are the blood-plates, but that, although the plates collect in a large number and more rapidly, the leucocytes do not long remain absent, and are finally present in such numbers that they must be considered as essential constituents. At first the conditions for coagulation are not present, but with the increasing accumulation of leucocytes these conditions appear and fibrillated fibrin is deposited. The final result, according to Welch, is a plug composed of plates, leucocytes, fibrin, and included red blood-corpuscles. These observations harmonize the seemingly antagonistic observations of Weigert and those of Eberth and Schimmelbusch. The very recent thrombi, as shown by the latter, are composed of blood-

plates, but as they become older, leucocytes and fibrin are added to them as essential constituents.

In a recent article in the "*Fortschritte der Medicin*," Löwit reports the results of some investigations opposed in many respects to those of Eberth and Schimmelbusch. He agrees with these writers that the blood-plates do not play the important part in the coagulation of the blood assigned to them by Bizzozero, but he thinks that they do constitute an important factor in the formation of thrombosis in the warm-blooded animals. But here begins the difference in their views. Eberth and Schimmelbusch believe that the blood-plates are normally present in the blood-current, because they have always demonstrated them in blood outside the vessels treated by the most varied methods, and also seen them, under conditions they regarded as normal, inside the blood-current. Löwit maintains that the blood-plates are not present under normal conditions in the blood-current, but that they appear after influences very slightly abnormal acting upon the blood or the blood-current. He professes to have shown by chemical investigation that the blood-plates consist of degenerated and, in a certain way, morphologically as well as chemically altered globulin. Löwit shows that under normal or nearly normal conditions the blood-plates are not present in the blood-current, but that upon altering the conditions of the experiment they appear in great numbers.

A second important difference between Eberth and Schimmelbusch's results and Löwit's relates to the so-called blood-plates of the cold-blooded animals and birds. The former writers regarded the spindle-cells found in the blood of birds and cold-blooded animals as corresponding to the mammalian blood-plates. Löwit has shown by careful and detailed investigations that these spindle-cells are quite different from the blood-plates of mammals, and that they are free cells composed of a peculiar form of hæmoglobin, out of which, either in or out of the circulation, under different conditions the well-known round cells may be formed. After the injection of a concentrated solution of common salt into the vessels of frogs, in some instances, Löwit has repeatedly observed isolated spindle-cells that were adherent to the vessel-walls transformed into the round cells. Under other conditions he has also observed the same change outside the vessels, and when any confusion was impossible. Löwit believes that there are no blood-plates in frogs' blood, because the degenerating globulin does not find the conditions necessary for the formation of plates, and so only produces a finely granular detritus, which he says can be artificially transformed into the disc or plate form.

As these blood-plates, then, are only degenerated globulin, it is not possible to separate so sharply as Eberth and Schimmelbusch have done blood-plate thrombosis from the true coagulation of fibrin thrombosis. The blood-plates, it is true, are not fibrin, and the deposition of the blood-plates on the vessel-wall is not a process of coagulation, but, in the course of the chemical alterations which the globulin readily undergoes, there is formed from it a substance similar to fibrin, which Löwit would call plate-fibrin to distinguish it from fibrillated fibrin.

Their formation and morphological appearance justify the sharp distinction made by Eberth and Schimmelbusch between plate-thrombosis and coagulation-thrombosis, but their chemical nature closely associates them, since the blood-plate thrombus is composed of a body closely related to fibrin.

EMMET'S OPERATION IN SCOTLAND.

At a recent meeting of the Glasgow Obstetrical and Gynecological Society, a report of the proceedings of which is given in the July number of the "Glasgow Medical Journal," Dr. Robert Park introduced the subject of uterine trachelorrhaphy, and the remarks made by that gentleman and by several of the others who took part in the discussion showed a more judicial frame of mind than that in which the subject is usually considered abroad. Dr. Park took Noeggerath's conclusions as his text. It was remarkable, he thought, that fifty bilateral lacerations reaching up to beyond the vaginal insertion could have occurred in one man's practice, and those, moreover, selected cases, suitable for comparison with fifty cases in which there had been no laceration at all. He inferred that such cases must be more common in Germany than in Scotland. As to this point, Dr. Park had perhaps erroneously concluded that the deliveries of the fifty women alluded to had all occurred in the Wiesbaden writer's practice, whereas they may simply have been observed by Dr. Noeggerath as a gynecologist in the conventional acceptance of the term. He agreed with Noeggerath that cervical laceration was no barrier to conception, even when extensive, and that it did not necessarily cause miscarriage; but he considered that fuller investigation would be needed to bear out the proposition that women with lacerations were more prone to conceive than those without them, and less apt to miscarry.

Although the position of the uterus might not be affected directly by lacerations, he thought that, nevertheless, the sure tendency of such injuries was to induce changes that would ultimately have that effect. He was satisfied that elongation of the uterus was both a direct and a remote consequence of cervical laceration; in this he agreed with the advocates of trachelorrhaphy, but, when they maintained that the operation was the only means of cure, he disagreed with them, considering that there were various methods of treatment whereby the morbid conditions could be remedied and all the concomitant phenomena overcome. Among the means of treatment he would include lactation, and its influence had to be taken into account in estimating the remote effects. In the matter of the comparative frequency of erosions, etc., of the neck and body of the uterus, it would take a much more extended series of observations to convince him that deep lacerations of the cervix did not *per se* predispose to morbid action, as well as excite dormant diatheses to activity. He would positively contradict the assertion that "eversion of the lips was never the direct result of a laceration," and cited a case in point, one carefully observed case being, he added, for the purpose in view, as good as a dozen. The case in question showed, however, that trache-

lorrhaphy need be resorted to only in cases of exceptional degree or when other means of relief had been tried in vain. He forbore to comment on Noeggerath's final contention that the restoration of the shape of the cervix could have no influence on the uterus, for he had never performed the operation himself nor had it done.

Dr. Samuel Sloan thought that the importance of cervical lacerations was mainly, if not wholly, confined to their promoting septic absorption during the puerperium; mechanically, they did no harm, and their repair was not likely to do much good. When they caused septic absorption, they led to uterine subinvolution, an unhealthy raw surface was left at the apex of the cleft, and there was some induration along the broad ligament of the affected side. To avoid the risk of septic absorption, if the tear was a severe one, the performance of trachelorrhaphy within a few hours after labor was, he thought, justifiable.

Some of our readers will doubtless remember that this procedure has been advocated by Dr. Pallen, of New York. Dr. Oliphant thought that lacerations were more common than Dr. Park supposed, and both he and Dr. Turner mentioned cases in which Emmet's operation had brought about a complete cure after other measures had failed; the latter gentleman conceded, however, that lacerations did not prevent conception.

Dr. Nigel Stark had often wondered why trachelorrhaphy was so seldom performed in Scotland as compared with America; it appeared to him that the eminent American gynecologists, Emmet, Thomas, Sims, and Mundé, must have produced good results with it, and that their opinions were entitled to respect. He had not been able to determine whether or not cervical lacerations and uterine subinvolution stood in the relation of cause and effect. He thought that ectropion and erosion were the most common results of the injury, and that they, in turn, led to leucorrhœa and menorrhagia. It was not unnatural to suppose that the erosion, when severe, intractable, and persistent, might at least predispose to the development of carcinoma at the menopause, as long-continued irritation of any part might cause cancer. Perhaps trachelorrhaphy had suffered from the excessive enthusiasm of its advocates. It should not be done in every case, but where treatment with douches, tampons, etc., had failed; where leucorrhœa, menorrhagia, or dyspareunia was an urgent and distressing symptom; and where, on account of hereditary predisposition, cancer was to be apprehended. With reference to the comparison between splitting the cervix for sterility and accidental laceration of the cervix during labor, the two things were in no wise comparable—the one made a clean cut, one that healed only too readily; the other was frequently a bruised and ragged tear that healed with difficulty.

Mr. Nairne had done Emmet's operation frequently, and perhaps unnecessarily, but he thought that it should be done in all cases of severe simple lacerations, while in compound lacerations it was better to amputate the cervix or use Paquelin's cautery.

MINOR PARAGRAPHS.

MEDICAL BULLETINS AND INTERVIEWS AS ADVERTISEMENTS.

THE newspaper clipping sent us by a correspondent whose letter appears in this issue, signed "Ethical," is an example of the way in which medical men too often figure in the newspapers, to their own immediate advantage, but highly to their discredit and to the detriment of the profession as a body. The practice of issuing bulletins in the cases of distinguished patients, although not necessarily reprehensible, has been much abused of late, and the "Nation's" question is no more than a natural intimation of disgust. We doubt, however, if what is known as discipline will do much to correct the evil; indeed, the very practitioner to whom our correspondent's inclosure refers is said to have received censure from a medical society, in consequence of which "he resigned, and his conduct has been more disgusting ever since." Public opinion is much more potent to check such practices, and the mere fact that a journal of the standing of the "Nation" has been moved to take the matter up will go far to restrain the offenses in question. The same may be said also of the answer attributed by one of the comic papers to a physician who, having been asked by the patient to hand him a dose of medicine, begged to be excused on the ground that his connection with the case was confined to the "bulletin department," adding that one of the other doctors would be in presently. The practice of covert and unmanly advertising—for that is what it amounts to—needs only to be made as distasteful to the public as it has always been to the better portion of the medical profession to insure its being dropped. Let it once be generally recognized that he who resorts to it is trying to achieve reputation by trick and device, and it will lose its charm—a result that censure from any number of medical societies could never bring about.

A FRENCH NOBLEMAN'S PUNISHMENT FOR ADULTERATING WINE.

IN our issue for July 14th we alluded to an epidemic that occurred last winter in Hyères, the cause of which was traced to sophisticated wine. It now appears, according to the London "Truth," that the adulterant was arsenic, by which five hundred persons were poisoned, of whom twenty died. The maker of the wine, *i. e.*, the poisoner, was a count, and the court "let him off with the absurdly inadequate sentence of twenty days' imprisonment and a fine of 100 francs." The writer in "Truth" adds: "I am aware that in England, where poisonous adulteration is looked upon as perfectly legitimate trade, he would probably have escaped with even a less severe penalty, but I was under the impression that they managed these things better in France." And yet the British Parliament will not tolerate the addition of saccharin to beer.

ITEMS, ETC.

The Congress of American Physicians and Surgeons.—

According to the preliminary programme, the proceedings in the general sessions will be as follows: *Tuesday evening, September 18th.*—"Intestinal Obstruction in its Medical and Surgical Relations" (papers by Dr. Reginald H. Fitz, of Boston, and Dr. Nicholas Senn, of Milwaukee, followed by a discussion).—*Wednesday evening, September 19th.*—"Cerebral Localization in its Practical Relations" (papers by Dr. Charles K. Mills, of Philadelphia, and Dr. Roswell Park, of Buffalo, followed by a discussion).—*Thursday evening, September 20th.*—The address of the president, Dr. John S. Billings, of the army, to be followed by a reception.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 31, 1888:

DISEASES.	Week ending July 24.		Week ending July 31.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus.....	1	0	0	0
Typhoid fever.....	32	9	31	11
Scarlet fever.....	116	22	111	14
Cerebro-spinal meningitis....	3	4	1	0
Measles.....	208	13	200	19
Diphtheria.....	109	31	94	38
Small-pox.....	9	0	0	0

Dr. Burnett on Corneal Refraction.—In our abstract of a paper on this subject, read before the American Ophthalmological Society at its recent meeting by Dr. Swan M. Burnett, of Washington, published in the Journal for July 28th, on page 100, the following corrections should be made: Fourth line from bottom, for "0.251" read 0.25 D, and in all similar expressions in the same paragraph, for the final "1" read D; in the last line of the first column, for "420" read 20.

The Quarantine Bill is now a law, having been signed by President Cleveland on Thursday, the 2d inst.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 29 to August 4, 1888:*

MAGRUDER, D. L., Surgeon, is granted one month's leave of absence, to take effect on or about August 13, 1888. Par. 11, S. O. 171, A. G. O., July 25, 1888.

WHITE, ROBERT H., Surgeon, is relieved from duty with Battalion 1st Infantry, at Santa Barbara, California, and will proceed to Angel Island, California, on public business, on the completion of which he will stand relieved from duty in this Department. Par. 4, S. O. 43, Headquarters Department of California, July 17, 1888.

MUNN, CURTIS E., Assistant Surgeon, will proceed to Santa Barbara, California, and report to commanding officer of the 1st Battalion of Infantry for duty. Par. 3, S. O. 43, Headquarters Department of California, July 17, 1888.

COCHRAN, JOHN J., Assistant Surgeon, will proceed to Benicia Barracks, California, on public duty, on completion of which he will return to these headquarters. Par. 1, S. O. 44, Headquarters Department of California, San Francisco, California, July 20, 1888.

ROBERTSON, REUBEN L., Assistant Surgeon, is relieved from duty at Fort Keogh, Montana Territory, and will report to the commanding officer at Fort Buford, Dakota, for duty at that post, and by letter to the commanding general. Department of Dakota, S. O. 167, A. G. O., July 20, 1888.

JARVIS, N. S., Assistant Surgeon, is granted one month's leave of absence, on surgeon's certificate of disability, with permission to go beyond the limits of the Department. Par. 1, S. O. 90, Headquarters Department of the Missouri.

JOHNSON, HENRY, Captain and Medical Storekeeper. Leave of absence granted for one month and fourteen days from August 1, 1888. S. O. 170, Headquarters of the Army, A. G. O., July 24, 1888.

WOLVERTON, WILLIAM D., Major and Surgeon, is relieved from duty at Washington Barracks, District of Columbia, and ordered to duty at Fort D. A. Russell, Wyoming. Par. 13, S. O. 173, A. G. O., July 27, 1888.

GARDNER, WILLIAM H., Major and Surgeon, is relieved from duty at Fort McHenry, Maryland, and ordered to duty at Washington Barracks, District of Columbia. Par. 18, S. O. 173, A. G. O., July 27, 1888.

CALDWELL, DANIEL G., Major and Surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and ordered to duty at Jefferson Barracks, Missouri. Par. 13, S. O. 173, A. G. O., July 27, 1888.

BYRNE, CHARLES B., Captain and Assistant Surgeon, is relieved from duty at Washington Barracks, District of Columbia, and ordered to duty at Fort McHenry, Maryland. Par. 13, S. O. 173, A. G. O., July 27, 1888.

EWING, CHARLES B., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Lewis, Colorado, and ordered to duty at Washington Barracks, District of Columbia. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 28, 1888:*

PENROSE, THOMAS N., Surgeon. Detached from the Navy-Yard, Boston.

PARKER, J. B., Surgeon. Ordered to the Navy-Yard, Boston.

McCORMICK, ALBERT McD. Commissioned an Assistant Surgeon in the Navy.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the three weeks ending July 23, 1888:*

BAILHACHE, P. H., Surgeon. To proceed to Delaware Breakwater Quarantine Station as inspector. July 6, 1888.

FESSENDEN, C. S. D., Surgeon. Leave of absence extended thirty days on account of sickness. July 14, 1888.

PURVIANCE, GEORGE, Surgeon. To proceed to Chattanooga, Tenn., as inspector. July 6, 1888.

SAWTELLE, H. W., Surgeon. Granted leave of absence for twenty-three days. July 9, 1888.

McINTOSH, W. P., Assistant Surgeon. To proceed to Galveston, Texas, for temporary duty. July 14, 1888.

PETTUS, W. J., Assistant Surgeon. Granted leave of absence for thirty days. July 16, 1888.

MURRAY, R. D., Surgeon. To proceed to Manatee, Florida, on special duty. July 21, 1888.

WASDIN, EUGENE, Passed Assistant Surgeon. To proceed to Key West, Fla., for temporary duty. July 21, 1888.

FATTIC, J. B., Assistant Surgeon. To proceed to Memphis, Tenn., for temporary duty. July 28, 1888.

WOODWARD, R. M., Assistant Surgeon. When relieved, to proceed to Boston, Mass., for duty. July 24, 1888.

GOODWIN, H. T., Assistant Surgeon. When relieved, to proceed to Cincinnati, Ohio, for duty. July 24, 1888.

GUIERAS, G. M., Assistant Surgeon. Appointed an Assistant Surgeon, July 23, 1888. Assigned to duty at Marine Hospital, New Orleans, La. July 24, 1888.

HUSSEY, S. H., Assistant Surgeon. Appointed an Assistant Surgeon, July 23, 1888. Assigned to duty at Marine Hospital, Baltimore, Md. July 24, 1888.

Society Meetings for the Coming Week:

MONDAY, August 6th: Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association.

TUESDAY, August 7th: Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Hampden, Mass., District Medical Society (Springfield); Androscoggin, Me., County Medical Association (Lewiston).

WEDNESDAY, August 8th: Medical Society of the County of Albany, N. Y.

THURSDAY, August 9th: South Boston, Mass., Medical Club (private); Medical Society of the County of Cayuga, N. Y. FRIDAY, August 10th: Medical Society of the Town of Saugerties, N. Y.

Letters to the Editor.

MEDICAL BULLETINS AND INTERVIEWS AS ADVERTISEMENTS.

July 24, 1888.

To the Editor of the New York Medical Journal:

SIR: The "Nation" of July 19, 1888, contains an article touching medical bulletins, and concludes by asking, "Has not the question an ethical side which deserves the attention of the medical associations?"

In nearly every community the medical profession has its advertiser who manages to keep his name before the people in some way or other. The "Nation's" remarks call to mind an article which appeared in one of the daily papers of this city a few days ago, which I herewith inclose. This illustrates the cunning of one of our local practitioners, who has resorted to all manner of means of keeping his name conspicuously before the public for over thirty years. Now I would just like to inquire if foisting such bosh upon the public for science is not only a violation of all rules of ethics, but exhibits a depravity from which honest medical men would recoil with instinctive abhorrence.

ETHICAL.

Proceedings of Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-fourth Annual Meeting, held at New London, Conn., July 18 and 19, 1888.

The President, Dr. W. F. NORRIS, in the Chair.

(Concluded from page 101.)

Double Congenital Irideremia in a Child whose Mother had a Congenital Coloboma of each Iris.—Dr. SAMUEL THEOBALD, of Baltimore, reported the case, and stated that it was probable, from the mother's description of the eyes of another of her children, that it also had been born without an iris. The coloboma did not involve the chorioid in either eye of the mother. In one eye it was directed upward.

Dr. WEBSTER had never seen a congenital coloboma upward; it was nearly always downward.

Dr. RANDALL had searched the literature on this subject, and had not been able to find the record of any case of congenital coloboma directed upward.

Puncture of the Retina for Detachment.—Dr. T. T. SUTPHEN, of Newark, reported three cases. The first operation was De Wecker's; the others were von Graefe's. The first was successful, the others were failures; in all, the conditions were similar, the detachment (from chorioiditis) was recent, but only in the successful case was there escape of the fluid outwardly. The author felt encouraged to try the operation in cases otherwise incurable.

Dr. WEBSTER had never done the operation, nor had the late Dr. Agnew, having been deterred from it by the loss of the eye

which, many years before, had followed it in the case of a patient of Dr. Noyes's. The speaker thought that at present, with antiseptic precautions, and where the detachment of the retina was recent, the operation was perfectly justifiable. But in cases of long detachment it must not be expected that the sight would be restored.

Glioma of the Retina.—Dr. F. P. CAPRON, of Providence, showed photographs of a case of glioma of the eye in a child of three years. The eye and tumor had been removed recently, and the child was still living, but a growth was going on outward toward the zygoma.

Dr. WEBSTER had not been able to detect increased tension in the eyeball in cases of glioma of the retina until the inflammatory stage had set in. He asked whether, in cases of cure of supposed glioma of the retina, there was a retrogressive metamorphosis.

The PRESIDENT replied that he should rather doubt the correctness of the diagnosis in such cases.

Dr. MITTENDORF thought that glioma of the retina must be more frequent in some localities than in others, and suggested also an investigation regarding hereditary tendency.

Refraction by Cylinders.—Dr. SWAN M. BURNETT exhibited some models showing refraction by cylinders. It was shown how the refractive and focal lines changed with the variation in the strength of the lenses and with an alteration of the angle of crossing of their axes. The models had been made at his suggestion by Mr. C. F. Prentice, of New York. Diagrams were exhibited showing by geometrical construction how it was possible to tell the course of any given ray after its refraction by any two cylinders of differing power, and at any angle of the crossing of their axes. A formula applicable to any case of crossed cylinders, calculated by Mr. Prentice, was also shown.

Anomalous Outgrowths upon the Optic Disc.—Dr. B. A. RANDALL, of Philadelphia, gave illustrations: 1. Of two cases of tiny cysts upon the optic disc, congenital in origin. 2. Of three cases of congenital dense white connective-tissue outgrowths upon the discs. 3. Of a large prominent outgrowth which was believed to be congenital. He also described some cases of anomalies of the retinal vessels.

Extraction of a Partially Absorbed Calcareous Lens.—Dr. DAVID WEBSTER, of New York, reported the case of a girl, aged twenty-three, who consulted the late Dr. Agnew and himself on March 15, 1888. There was phthisis bulbi of the left eye, and in the right eye there were the calcified remains of a lens that had been mostly absorbed, with a discolored, atrophic-looking iris, attached to a membranous mass behind it by numerous adhesions. The visual field was good, V = counting fingers at two feet. The patient gave a history of loss of sight in the left eye from a blow at the age of two years. Some time afterward a cataract developed in the right eye. Violent painful inflammation had followed one or more of several operations on both eyes by a Cincinnati surgeon. On March 16th Dr. Agnew removed the left, atrophic, eyeball, and did iridectomy on the right eye, and on April 27th the speaker divided two or three of the adhesions which were markedly on the stretch. After three separate trials he succeeded in seizing and pulling out the mass obstructing the pupil, and cut it off close to the cornea. Some pain was present after the operation.

The Designation of Prisms by their Refracting Power.—Dr. EDWARD JACKSON, of Philadelphia, suggested this method of designating prisms, instead of by their refracting angle, since the angle of refraction varied in different samples of glass, and it was the refracting power which determined what prism was to be used. A committee, consisting of Dr. NOYES, Dr. JACKSON, and Dr. SWAN M. BURNETT, was appointed to report on the designation of prisms, at the meeting in Washington.

Officers for the Ensuing Year.—Dr. W. F. NORRIS was re-elected president, Dr. HASKET DERBY was elected vice-president, and Dr. S. B. ST. JOHN secretary. The society will meet at the Arlington Hotel, Washington, on September 19, 1888; and at the Pequot House, New London, on the third Wednesday in July, 1889.

Book Notices.

Ophthalmic Surgery. By ROBERT BRUDENELL CARTER, F. R. C. S., Ophthalmic Surgeon to St. George's Hospital, etc., and WILLIAM ADAMS FROST, F. R. C. S., Assistant Ophthalmic Surgeon to St. George's Hospital, etc. Illustrated with a Chromograph and Ninety-one Engravings. Philadelphia: Lea Brothers & Co., 1888. Pp. 554.

This little volume presents a concise account of the present state of ophthalmic therapeutics and surgery, but of necessity has its limitations. The first two chapters are devoted to a consideration of the anatomy and physiology of the eye, and the methods of examination usually employed. As might naturally be supposed, there are some points susceptible of improvement. We note in the third chapter a very imperfect description of diphtheritic conjunctivitis, in which the points in diagnosis are not adequately brought out. Moreover, in the same chapter the authors do not sufficiently distinguish between ordinary purulent conjunctivitis and the gonorrhœal form of the disease. In the same chapter, in describing the treatment of stricture of the nasal duct, no mention is made of Theobald's probes, which on this side of the ocean have been found so useful. In the chapter on diseases of the cornea the method of surgical treatment of corneal leucoma by means of transplantation of a flap of cornea from some of the lower animals, which has been exciting much attention during the past year or two, receives no mention; an oversight which is difficult of explanation. The same may be said of the simple extraction of cataract without iridectomy, a revival of an old operation which has been done extensively in France, Germany, and this country, and which has excited great interest in the ophthalmological world. Furthermore, it seems unfortunate, at this period in the development of ophthalmic science, to head a chapter "Amblyopia and Amaurosis," which are merely symptoms, so that the heading is likely to be misleading. It would seem more in consonance with modern knowledge to have incorporated what has been said on these subjects with the chapter on diseases of the retina and optic nerve. Chapter XIII, on errors of refraction, is a good epitome of the subject, though we think that more space is given to the "shadow test" than its real importance warrants. Chapter XV, on diseases of the orbit, is an excellent presentation of the subject—perhaps the best chapter in the book. The book contains also Snellen's and Jaeger's test-types, some prescription formulæ, and a satisfactory index. The volume is very compact and offers a mass of information which has been fairly well digested.

Essentials of Chemistry and Toxicology, for the Use of Students of Medicine. By R. A. WITTHAUS, A. M., M. D., Professor of Chemistry and Physics in the University of New York, etc. Second Edition. New York: William Wood & Co., 1888. Pp. vi-294. [Wood's Pocket Manuals.]

This little volume is a veritable *multum in parvo*, and must certainly prove a valuable aid to the student in chemistry. It contains the essentials of the subject in the fewest possible

words, and in this edition—a revision of the original work—everything is given that is required to bring the subject fully abreast of the latest facts and theories known to science. It must prove of great value to the student of medicine in attendance on a course of lectures, which necessarily occupy so much of his time as to make the systematic study of more detailed works almost an impossibility. In the appendices will be found lists of chemical elements, their symbols, and their equivalents, together with a table of the metric system of weights and measures, and a simple formula for the conversion of the centigrade thermometric scale into the Fahrenheit, and *vice versa*, which will be found very convenient. The book is printed from handsome, legible type, and is bound in a durable manner.

The Hygiene of the Skin, or the Art of preventing Skin Diseases. By A. RAVOGLI, M.D. Cincinnati: Central Medical Publishing Company, 1888. Pp. xii-13 to 399. [Price, \$3.]

This is one of the most extraordinary books that we have ever been called upon to review. From the title-page to the word "finis" it is full of surprises. In regard to hygiene, as usually understood, we find nothing about it till we come to page 204. The book thus far has been devoted to an account of the anatomy and physiology of the skin, to a classification of races by the character of the skin, and to a description of the symptoms and treatment of syphilis, scrofula, prurigo, ichthyosis, the exanthemata, and a score of other diseases. This is certainly a surprise. We would note that in the treatment of these diseases very little is said about either hygiene or diet. But perhaps we get a more correct idea of our author's purpose in writing the book by reference to the first paragraph of its preface: "I have often thought of publishing a few observations on the ætiology of the diseases of the skin, since I find the books do not sufficiently reflect our present knowledge of the conditions of dermatology." This is another surprise, as well as the statement, on page 45, that "It is a matter of surprise that in all treatises upon skin diseases ætiology is almost entirely neglected, and the influence of sex, race, age, etc., as morbid causes is made so unimportant." And yet in the book now before us we fail to find anything of importance relating to these matters that is not to be found in the standard treatises upon dermatology. Many of the author's propositions seem to us erroneous. Eczema is classed among the diseases due to the influence of diet. Fatty food is denied to patients with acne, but we know that many of them are benefited by such fatty food as butter, oils, and glycerin. Coffee is said never to have caused skin diseases, but we know that coffee will often cause or aggravate pruritus. Tea is commended as a drink, but we know that it will disturb digestion when taken too freely, and will cause rosacea. The skin is said to be so absorptive that it is capable of absorbing malarial and other poisonous emanations. This is not supported by any authority. The use of soap is commended as a preventive of wrinkles, and it is said never to "irritate even the delicate skin of an infant." This is contrary to experience. The following sentence is worthy to be quoted in full: "Many times the linen or cotton undergarments are put away in a drawer or closet soon after having been ironed, still saturated with moisture. This is very often the cause of herpes or tinea tonsurans of the body." The dampness and warmth, he explains, favor the development of the mold fungus, *Mucor mucedo*, which changes into the *Trichophyton*. This is another surprise, and we wonder upon what experiments the statement is based.

The subject of the hair seems to affect some authors in a remarkable manner, and not a few men have wasted much time and space in writing long descriptions of how the hair was

dressed in ancient times. Our author has yielded to the spell and devoted eight pages to head-dresses and defunct fashions. Shaving is regarded as the best means of getting rid of superfluous hair, regardless of the fact that in time it will cause the skin to assume that color which is readily recognizable in all who shave. Electrolysis is allowed to be efficacious for hirsuties, but for the author its use is "a waste of time." When we consider his method of operating, we no longer wonder that he considers the operation as "a waste of time." The deformity is said by him to occur especially in "unmarried maids with a male appearance." Of the present writer's first fifty cases treated by electrolysis, twenty-four were in married women and twenty-six in unmarried women, and in only eight cases was the masculine type pronounced.

The book is carelessly put together, though this may not be altogether the author's fault. We find under the heading "*Scleroderma neonatorum*" seborrhoea, erythema, and some half a dozen other diseases; and under parasitic diseases molluscum contagiosum is placed. The title "*Atrophy of the Hair*" is given on pages 314 and 328. Typographical errors are not infrequent. We note on page 178 "*Connheim*" for Cohnheim. "*Parville*," on page 234, should be, we think, Prudden, as we do not remember Parville as having made investigations in regard to the bacteria in ice. "*Phtyriasis*," on page 257, should be phtheiriasis. On page 258, *Trichophyton* is twice misspelled, once as "*Trychophiton*," and once as "*Trychophyton*." On the same page, also, stands "*Erytrasma*," for Erythrasma. To make these criticisms of an author's first book is painful, but we trust that they will be helpful. If the book were only revised, and all that does not belong to the hygiene of the skin remorselessly cut out, it might be called a commendable effort. As it is, Milton's book on the same subject need not fear this one as a rival.

Obstetric Synopsis. By JOHN S. STEWART, M.D., Demonstrator of Obstetrics and Chief Assistant in the Gynecological Clinic of the Medico-chirurgical College of Philadelphia. Illustrated. Philadelphia: F. A. Davis, 1888. Pp. x-202. [Physicians' and Students' Ready Reference Series.]

THE author has not alleged too much for this little volume when he asserts in his introduction that by its aid the undergraduate will be able to inform himself at a glance upon any essential point in the study of the obstetrical science not made clear by lectures, which must engross so much of his time as to make the study of more exhaustive text-books a matter of impossibility. The subject is treated with clearness, though in few words, and the facts and theories advanced are in accord with the views held by the recognized authorities.

In an Appendix will be found the report, as accepted by the Obstetrical Section of the Ninth International Medical Congress, relative to the desirability of uniformity in obstetrical nomenclature, and the definitions and designations recommended for adoption by obstetric teachers and authors, which it is at least well to know. The book is a good specimen of printing, forming a neat, handy volume, likely to fulfill well the object for which it was intended.

Abdominal Surgery. By J. GREIG SMITH, M.A., F.R.S.E., Surgeon to the Bristol Royal Infirmary, etc. Second Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi-776. [Price, \$7.]

A YEAR has not passed since the appearance of this book was hailed with encomiums by the medical press. It was then considered to be a compendium of our knowledge in the subjects of which it treated, and it is very indicative of how imper-

fect that knowledge is that the author declares that the advance which has been made in this short time is astounding. That much has been accomplished in abdominal surgery during the past year is attested by the addition of about ninety titles to the bibliography at the end of the work; also by the facts that some improvement has had to be chronicled for every operation, and that several new operations have been added. A new section on suprapubic cystotomy has been introduced, and the section on reparative surgery of the abdomen is comparatively new. The praise accorded the first edition is even better deserved by the second. The arrangement is good, the descriptions are clear, and the language is so well chosen as to make very pleasant reading. It is a work to be recommended to every practitioner.

The Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. 1888, Sixth Year. Bristol: John Wright & Co. Pp. xv-558.

THE main object of this work is to present in the most convenient form for reference the progress which has been made in medicine and surgery during the past year. The "Dictionary of New Remedies" includes not only the additions which have been made to the *materia medica*, but also the results of investigations regarding old and well-known drugs, arranged alphabetically. The "Dictionary of New Treatment" is a similarly arranged condensed account of the advances made in the treatment of diseases, both surgical and medical. These notes, though brief, are sufficiently copious to enable one to feel "abreast of the times," if familiar with them. Aside from these there is in the book little of value to any one who is not a resident of the United Kingdom. It contains a list of the principal medical works published during the year—that is, the English ones mostly—notes on new inventions and improvements in pharmacy, a list of the asylums in Great Britain and Ireland, a trade directory, and a list of medical and scientific newspapers. At the end of the book blank leaves are inserted for manuscript notes.

BOOKS AND PAMPHLETS RECEIVED.

Intracranial Tumors. By Byrom Bramwell, M. D., F. R. C. P. E., F. R. S. E., Lecturer on the Principles and Practice of Medicine in the Extra-academical School of Medicine, Edinburgh, etc. With One Hundred and Sixteen Illustrations. Philadelphia: J. B. Lippincott Company, 1888. Pp. xiv-270. [Price, \$4.50.]

Atlas of Venereal and Skin Diseases, comprising Original Illustrations and Selections from Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerrier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus vi. New York: William Wood & Company, 1888.

A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis, and Treatment. By Robert W. Taylor, A. M., M. D., Surgeon to Charity Hospital, New York, etc. Illustrated with One Hundred and Ninety-two Figures, many of them Life-size, on Fifty-eight beautifully colored Plates. Also many large and carefully executed Engravings through the Text. Parts I and II. Venereal Diseases. Philadelphia: Lea Brothers & Co., 1888.

The Best Surgical Dressing: how to prepare it and how to use it, with a Consideration of Beach's Principle of Bullet-wound Treatment. By Otis K. Newell, M. D., Assistant Demonstrator of Anatomy at the Harvard Medical School, etc. Boston: Cupples and Hurd, 1888. Pp. 9 to 179. [Price, \$1.]

The Morbid Anatomy of Congenital Talipes Equino-varus. By J. B. Bissell, M. D., etc. [Reprinted for the "Archives of Pædiatrics."]

A New Way of training Nurses. By A. Worcester, A. M., M. D., Physician to the Waltham Hospital. Boston: Cupples and Hurd, 1888. Pp. 11 to 118. [Price, 50 cents.]

Report of Proceedings of the Illinois State Board of Health. Quarterly Meeting, Chicago, June 28-29, 1888. Small-pox—Sanitary Work—Water Supplies—Conference of State Boards of Health—National Quarantine—Conference of Local Health Officers—Medical Education and Statistics.

The Formation and Excretion of Uric Acid considered with Reference to Gout and Allied Diseases. By A. Haig, M. A., Oxon., M. R. C. P., etc. Being a Thesis for the Degree of M. D. in the University of Oxford. London: John Bale & Sons, 1888.

New York Post-graduate Medical School and Hospital. Seventh Annual Announcement. Sessions of 1888-89.

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.

DR. DWIGHT records observations of the following muscular abnormalities ("Jour. of Anat. and Phys.," Oct., 1887):

Absence of the Flexor Carpi Radialis.—This abnormality occurred on the right side of the body of a muscular young man. Nothing could be found which might be said to represent it except a small, pale, muscular belly which arose from the anterior border of the tendon of the supinator longus, one inch above the styloid process, became tendinous, passed through a separate sheath near the surface of the annular ligament, with the radial artery lying between it and the supinator longus, and was inserted into the abductor pollicis. The only reasons for considering this muscular slip to represent the flexor carpi radialis were its position and relation to the artery just above the wrist, while the more important consideration of its origin and insertion are opposed to such a view. No trace of anything representing the muscle could be found at the places of insertion into the metacarpus. The palmaris longus was very strong, its muscular portion extending more than half-way down the forearm.

Duplicity of the Vastus Externus.—Of this two cases were observed. In the first case "a tendinous band about one third of an inch broad and four inches long arose from the anterior surface of the capsule of the hip joint, a little below the inferior spinous process of the ilium, and joined the deep fasciæ of the tensor vaginæ femoris near the lower end of the muscular fibers. An inch and a half from its origin it gave off a slender tendon which, two inches and a half lower down, became muscular and joined the anterior surface of the vastus externus at about the middle of the thigh." In the second case the origin from the linea aspera was shorter than usual. The important peculiarity was that a part of the muscle sprang from a tendinous band attached to the anterior inferior spine of the ilium, and seemed to represent the inner limb of the Y-ligament. The lower part of this was muscular and joined the anterior edge of the vastus externus. It occurred to the observer that in the earlier part of life the muscle might have a higher origin, but he found nothing to confirm this on examination of several infants and fetuses.

The Interclavicularis Anticus Digastricus Muscle.—The greater part of the clavicular portion of the pectoralis major was wanting on both sides, only a narrow slip arising at the junction of the outer and middle thirds of the clavicle, so that a space three inches wide was left between it and the sternal portion. This deficiency and the two halves of the abnormal muscle were very symmetrical. The latter arose from the front of each clavicle by an origin an inch and a half broad, the outer end of which was covered by the clavicular portion of the pectoralis major. The outer muscular parts were united by a median tendon two inches long, which crossed the sterno-clavicular joints and lay in front of the sternum. Some of the superior fibers of the sternal portion of the pectoralis major sprang from this tendon.

The Sternalis Muscle.—Of this anomaly Dr. Dwight has observed seven cases. The first was in a female anencephalous fetus. There was a deficiency in each pectoralis major. On the left the upper part arose from the clavicle in front of the manubrium and the cartilages of the first two ribs, on the right from the clavicle and cartilages of the first three ribs, but not from the sternum, except near the sterno-clavicular articulation. The lower part arose from the third, fourth, and fifth costal cartilages on the left side, from the fourth and fifth on the right. The sternalis was present on both sides. On the right it ran along the inner border of the upper division of the pectoralis major from the fourth costal cartilage to near the top of the manubrium. On the left the muscle was divided into two parts, the lower of which ran upward and slightly inward from the fourth costal cartilage to the third, the upper from the third to the second, its lower part being external to the upper end of the lower one. Both slips on the left side appeared to overlap the pectoral fibers.

In the second case the sternalis arose from the sheath of the rectus opposite the fifth or sixth costal cartilage, about two inches from the median line, and passed upward and inward to end in the fascia covering the pectoralis at the level of the second cartilage. It was three fourths of an inch broad.

In the third case it was a triangular muscle arising by small tendinous bands from the sheath of the rectus opposite the sixth cartilage, an inch from the median line. The inner border was vertical and slightly concave, the other extended obliquely outward. Its greatest breadth was two inches and a half opposite the second rib. At this level the outer part became fibrous and ended in the pectoral fascia, while the inner part joined the sternal head of the sterno-mastoid. The nerve-supply was from the intercostals.

In the fourth case it arose from the sheath of the rectus as in the second case, and by fibers from the lower portion of the pectoralis, and was inserted over the manubrium in the middle line. Its greatest breadth was three fourths of an inch.

In the fifth case it was double. The right muscle arose by tendinous fibers from the fifth, sixth, and seventh cartilages and the sternum. Opposite the third cartilage it divided into two parts, the outer one spreading out over the pectoralis and becoming lost in the fascia over it. The inner portion received a small muscular belly from the fourth cartilage, soon became tendinous, and ran to the middle line, where it divided into a slender tendon, which joined the right sterno-mastoid, and several bands which passed under the pectoralis major of the opposite side, where they became attached to the second cartilage, or gave origin to a deep head of the left pectoralis major. The left sternalis arose from the pectoral fascia at the lower border of the muscle, and was inserted into the sternum at the level of the second cartilage under cover of the right sternalis. The nerve-supply was probably from one of the anterior thoracic nerves.

In the sixth case it arose from the pectoral fascia over the fifth cartilage, and was inserted into the sterno-mastoid. Its greatest breadth was less than half an inch.

In the seventh case it was double. It arose on the right side from the pectoral fascia over the fifth rib, the fourth cartilage, and the sternum, and was inserted into the right sterno-mastoid. It was supplied by the third intercostal nerve. On the left side it originated from the pectoral fascia at the level of the sixth cartilage, and was inserted into the left sterno-mastoid. It was supplied by the second and third intercostal nerves.

A Right Subclavian Artery passing in Front of the Scalenus Anticus.—Curnow (*ibid.*) presented a specimen of this rare anomaly to the Anatomical Society of Great Britain and Ireland last July. It was taken from a male subject twenty-eight years old. The vein passed in front of the artery as usual. The artery was in its normal position on the first rib, but the scalenus-anticus muscle and the tubercle for its insertion were placed more posteriorly than normal. The cords of the brachial plexus passed behind the scalenus anticus. On the left side the artery and the muscle were in their normal positions. Only eight similar cases have been reported. Quain did not meet with this variation in 296 cases.

The Suspensory Ligaments of the Thyreoid Gland.—Berry (*ibid.*) calls attention to a pair of ligaments connected with the capsule of the

thyreoid gland which pass from the inner and back part of each lobe of the gland upward to the sides of the cricoid cartilage, and form on each side the upper end of a kind of sling in which the organ is suspended, and by which it is firmly fixed to the larynx. The ligament has no definite or abrupt margins, but is continuous with the thin layers of fascia on either side, the inner attached to the whole of the anterior surface of the cricoid cartilage, while the other passes to the posterior surface of the trachea. These ligaments have to be divided before the gland can be removed, and a careful study of their position may result in the separation being effected with much less dissection. The recurrent laryngeal nerve lies in immediate contact with the ligament on its posterior and outer surface.

The Circle of Willis.—Dr. Windle ("Jour. of Anat. and Phys.," Jan., 1888) found in 76 out of 200 cases the arrangement of the arteries at the base of the brain forming the circle of Willis strictly that described in the text-books as normal. In 43 of the others the only deviation was a more or less marked disproportion between the posterior communicating arteries of the two sides, so, if this be disregarded, the normal number and arrangement was present in 119 out of 200 cases. The anterior communicating was normal in 159 cases. Its usual variation was duplicity, which was complete in 14 cases, incomplete in 6. In 1 case three were found. In 8 cases it was absent. Twice it was associated with union of the anterior cerebrals. In 9 cases it formed the origin of a third anterior cerebral artery, called the arteria cerebialis anterior media, which passed forward in the longitudinal fissure for two thirds of the length of the corpus callosum, and divided into branches supplying the opposed surfaces of the hemispheres. The anterior cerebral arteries were normal in 181 cases. In 2 cases the right artery was absent; in one its place was supplied, to a certain extent, by twigs from the right middle cerebral; in the other by a small branch which sprang from the right internal carotid. In 1 case the right vessel was double the size of the left; in another the two anterior cerebrals united to form a single trunk, and in 8 they united for a short distance, six times replacing and twice accompanying the anterior communicating. The posterior cerebral arteries were normal in 173 cases. The most common variety was derivation of one or both from the internal carotid, instead of the basilar. This occurred eleven times on the right side, nine on the left, and four on both sides. There were two posterior cerebral arteries on the same side in three cases, once on the right, twice on the left. In each the smaller was derived from the basilar, the larger from the internal carotid. In 1 case a twig from the posterior cerebral divided the third nerve into two portions, which afterward reunited. Aside from disparity in size, the posterior communicating arteries were normal in 175 cases. Both were absent in 3 cases, the right in 9, the left in 13. In the majority of these cases there was a slight anastomosis in the interpeduncular space between twigs from the basilar and the internal carotid. In 7 cases both arteries were very small, in 28 the right was much larger than the left, in 15 the left was larger than the right. These variations of the posterior communicating are particularized: 1. Both arteries springing from the internal carotid, in the position normally occupied by the posterior communicating, and passing to the under surface of the temporo-sphenoidal lobe, where a few twigs anastomosed with twigs from the posterior cerebral. 2. The left artery similar to the above; the right normal in position, but small. 3. No artery on the left side. 4. The left artery a mere thread. 5. The left artery commenced at the carotid as a trunk of normal size, but gave off numerous branches, and was reduced to a thread before it insinuated with the posterior cerebral. 6. The artery which represented the left posterior communicating, which was absent, passed backward beside the posterior cerebral, shared its distribution, and slightly anastomosed with it.

It may be noticed that when one of the posterior communicating arteries was smaller than the other, or absent, it was usually the left side which suffered. Hence it may be inferred that in these cases the supply of blood to the left side of the brain was less complete than that to the right. If this is true, it negatives the theory that right-handedness is due to a more complete vascular supply of the left half of the brain. The same fact may in some cases explain the lodging of emboli in the left middle cerebral arteries rather than in the right.

A vessel of unknown origin, as not examined at the time of the removal of the brain from the cranium, ran along the right side of the pons to the right crus, along which it coursed, crossed to the right optic tract, and terminated in the right Sylvian fissure by inosculation with the middle cerebral artery. It communicated with the right superior cerebellar artery, and, by a branch running across the middle of the crus, with a branch from the end of the basilar, which probably represented the posterior communicating, which otherwise was wanting. Before turning into the Sylvian fissure it gave off a branch which passed in front of the optic commissure, and terminated in the anterior fissure. The right posterior cerebral arose from the internal carotid.

Riders' Bone.—The development of bone in the tendons of the adductor muscle has been occasionally noticed in men habitually accustomed to horseback riding, and has been attributed to injury in the region of the adductors during violent action on horseback. That this is not the only cause is shown by a case recorded by Dr. Struthers (*ibid.*), in which this bone developed on each side in the tendon of the adductor longus of a man who had been a foot-soldier for twenty-one years and had never been to any great amount in the saddle.

The bone on each side was an inch and a half long, three quarters of an inch to one inch thick, and for the most part triangular. The right bone articulated with a projecting platform at the angle of the pubes by a diarthrodial joint. It was felt to be movable during life. The left bone was fixed immovably to the pubes. The adductor longus tendon was directly prolonged from the end of the bone, which was flattened toward the tendon; the fascia lata was attached to its inner surface, the fore part of the gracilis to the inner posterior border, the inner part of the pectinæus to the outer side, and a large part of the adductor brevis to the posterior surface.

Variations in the Shape and Position of the Liver.—Symington ("Edinb. Med. Jour.," Feb., 1888) draws the following conclusions after a careful investigation by means of frozen sections: Distension of the stomach causes certain definite alterations in the shape and position of the liver. The movement is complicated, but may be roughly described as a rotation around a vertical axis passing through the inferior vena cava. The left lobe and the anterior part of the right lobe undergo the greatest displacement. The relations of the peritonæum facilitate this movement. Thus the anterior surface of the liver and the corresponding part of the abdominal wall are covered by peritonæum, while the left lateral and suspensory ligaments of the liver are long, mesentery-like folds. When the stomach is empty the suspensory ligament is relaxed and thrown into a number of folds; as it fills, the anterior surface of the liver glides over toward the right, and the ligament becomes tense and tends to check excessive movement of the organ. The round ligament and the left lateral ligament assist in confining its movements. The vena cava and the Spigelian lobe are moved but little if at all. The posterior surface is so bound down by firm connective tissue and by the coronary ligaments as to preclude any appreciable movement. Probably the gliding of the anterior surface to the right is associated with a backward movement of the right surface. The liver always keeps its general form—that of a triangular prism—but the transverse diameter is diminished and the vertical extent on the right side increased by distension of the stomach.

The Peritoneal Covering of the Colon.—Mr. H. W. Allingham, Jr. ("Brit. Med. Jour.," April 28, 1888), gives the result of an examination of the peritoneal covering of the ascending and descending colons in sixty cases in a very instructive article. His observations seem to indicate the existence of a mesocolon much more frequently than is ordinarily supposed, for he found the intestine bound down to the loin, the peritonæum covering only one half or two thirds of its circumference, leaving the posterior part uncovered, in eleven cases on the right side and in ten on the left. A mesocolon of varying length was present in forty-nine cases on the right side and in fifty on the left.

Fistulæ Fissurarum Branchialium with Defective Membrana Tympani.—Ole Bull ("Arch. of Otol.," March, 1888) reports a case in which traces of the first branchial cleft seemed to be left in the form of fistulæ. On each side, at the beginning of the helix, a depression like that left by a small pin-head was to be seen; below these, in the skin over the sterno-mastoid muscle, were the openings of sinuses which

admitted a probe to the depth of five millimetres. The drum-heads were defective, the membranæ flaccidæ being absent, the remaining part occupying the under half of the space visible by means of the otoscope. The boundaries of the drums in the upper and posterior part were not well defined. The malleus handle was much retracted. No alteration of the membrane could be seen after inflation. The respiration of the patient could be distinctly heard through the diagnostic tube. Frequently when the ear was syringed the water issued from the corresponding nostril. Attempts to pass probes through the Eustachian tube failed, as they caused pain when introduced six millimetres beyond the beak of the catheter. Whether this defective state of the drum-heads and the free opening of the Eustachian tube are to be regarded as a consequence of a retarded closure of the first branchial cleft in the same manner as the fistulæ, or not, is doubtful.

The Hymen.—Krysinski describes the following anomaly of the hymen ("Archiv f. path. Anat. u. Physiol. u. f. klin. Med.," Feb., 1888): In the lower part of the hymen was a small irregular opening which admitted a sound 5 mm. in circumference. In the median line above this was a rather large protuberance which was at first mistaken for the meatus urinarius. Closer examination showed it to be formed by a duplication of the mucous membrane of the hymen resembling a semilunar fold. This fold was split from the upper free border so as to form a pocket with no opening in its lower, posterior, or lateral walls. The urethra discharged $2\frac{1}{2}$ to 3 ctm. behind the hymen into the vagina, and the urine escaped through the small opening in the lower part of the hymen.

Sutton declares that the hymen is simply a septum which results from the imperfect fusion of the proctodæum with the uro-genital section of the cloaca ("Contrib. f. Gynækol.," "Am. Jour. of the Med. Sci.," May, 1888). When this septum is complete, imperforate hymen is present, and other forms are due to defects in the septum. Rarely the septum is absent at birth. Abnormalities of the vulvo-vaginal orifice are apt to be associated with defects elsewhere, particularly in the alimentary tract, the commencement of which is developed in a similar manner. The mouth and pharynx are developed from the stomodæum, or involution of the epiblast, which meets the anterior end of the fore gut at about the position occupied subsequently by the cricoid cartilage, where a membrane similar to the hymen is formed. Usually, when in the embryo two *culs-de-sac* come together and press upon each other, a hymen-like septum is formed which may afterward disappear.

An Infant with Two Mouths.—Lendon ("Australasian Med. Gazette," March, 1888) describes an infant born with two mouths, separated by a fleshy partition extending from the lips to the fauces, where they opened into a common pharyngeal cavity. Faint indications could be seen of separate chins and lower lips, but there was no well-defined sulcus. The alveolar processes of both jaws could be traced in both mouths, but they were in places distorted. The width between the rami on the left side was about one half that on the right. The two jaws were united so closely that no movement could be obtained between them. The common lower lip had a well-marked frenum. Each mouth had a tongue, the left much the smaller. The nose was large and wide, and presented at the junction of the columella with the lip a third, central nostril. The larynx and trachea were very wide, and it was thought that a groove dividing two tracheæ could be felt. Two hyoid bones could not be demonstrated.

The child died after a few months, but the body could not be obtained for examination.

MATERIA MEDICA AND THERAPEUTICS.

By H. N. VINEBERG, M.D.

Delphinium Staphisagria.—Debiarre ("Nouveaux remèdes," No. 1, 1888) says that the seeds have a disagreeable odor and contain four different kinds of alkaloids, the most important of which is delphinine. This is an amorphous yellowish powder of resinous appearance. Its toxic qualities were first studied by Orfila.

Action of Delphinine.—On the digestive apparatus it acts as an irritant, causing salivation, vomiting, diarrhœa, and abdominal pains. It

diminishes the number of the respiratory movements and renders respiration short and difficult. It also diminishes the frequency of the heart's action, and gradually the pulsations grow less powerful. Its effect upon temperature is not very well known, but in a few cases there was elevation of the body heat. Some observers have noticed congestion of the kidneys and the presence of sugar in the urine after its administration. It paralyzes the motor and sensory apparatus of the nervous system.

The therapeutic uses of delphinine resemble those of veratrine, but it is not so likely to cause vomiting as that drug. It is of value in facial neuralgia, chronic rheumatism, and convulsive affections. It may be given in palpitations, whether of nervous or organic origin. The best form of administering it is in granules or pills. The maximum dose is from $\frac{1}{60}$ to $\frac{1}{16}$ of a grain. Externally it produces a slight caustic effect and may be employed in tic-douloureux, paralysis, and rheumatism.

Hyoscine.—Erb ("Ctrbl. für die ges. Ther.," Jan., 1888) relates his experience at some length with this alkaloid. Different from Kobert, he found that the hydrochloride was as powerful as the two other salts, the hydriodide and the hydrobromid. The dosage must be very small, from two to four decimilligrammes ($\frac{3}{100}$ to $\frac{1}{150}$ grain), and the drug is usually administered subcutaneously. The tolerance of the drug varies much with different individuals. The untoward effects commonly noticed were a feeling of general weakness, sleepiness, heat in the face, dryness of the throat, dizziness, confusion, imperfect vision, and difficulty in articulation. Its hypnotic effect was observed in a great number of patients, and some actually fell into a sleep after the injection. It produced sleep in some instances when all other means had failed. Erb paid special attention to the value of the drug in irritable conditions of the motor system. He found it especially useful in the tremor of paralysis agitans. Of course it had only a palliative effect. In some cases of severe and obstinate spasm of single or groups of muscles, hyoscine afforded relief for a few hours; in others it proved of no service. In one case of severe recurring tetany a single injection of the drug cured the attack, but in subsequent attacks it was of no avail. In a case of severe hemiplegic chorea it had a calmative effect, which, however, was only temporary.

Inhalations of Hydrofluoric Acid in Tuberculosis.—Bardet ("Nouveaux remèdes," Nos. 2 and 3, 1888) discusses the value of hydrofluoric acid as an antimicrobial in tuberculosis. He expresses the belief that it is more efficacious than sulphureted hydrogen, and has an advantage over this agent in being administered by inhalation. He describes at some length an apparatus for this purpose, two different drawings of which appear in the paper. Full instructions are given as to the method of diluting the acid with carbonic acid, and also as to the duration of the séances.

In a preceding number of this Journal occurs a *résumé* of Dr. Herard's communication to the Academy of Medicine on the same subject. This author gives the following statistics of the therapeutical results of this method of treatment as furnished by M. Garcin: Of 100 patients with phthisis, 35 were cured and 41 underwent improvement; 14 remained stationary and 10 died. Herard remarks that hydrofluoric acid has an undoubted therapeutic effect in phthisis which is not too far advanced. Its administration, he says, is simple, and need not interfere with other forms of treatment.

Inhalations of Sulphurous Acid in Catarrhal Affections and in Phthisis.—Ley ("Nouveaux remèdes," 1887, No. 23) states that in the Cherbourg Hospital the method is as follows: In a room of a known capacity to each cubic metre from 5 to 20 grammes (gr. lxxv–3vj) of sulphur is burned. The patient is not allowed to enter until ten or twelve hours have elapsed, and he then remains in the chamber for from three to six hours. The article does not give any clinical results, but is simply occupied in figuring out the quantity of gas to each litre of air.

Modern Cardiac Therapeutics.—Eichhorst ("Ctrbl. für die ges. Ther.," March, 1888), in a very practical paper, gives some valuable hints regarding the more modern remedies in affections of the heart. Digitalis, he says, still holds the first place among these. It is of great practical importance that the remedy be given in conjunction with or immediately after alcoholic stimulants and excitants. Espe-

cially is this the case when marked cyanosis exists. Digitalis in those cases has no effect until the vagus center is stimulated by the administration of alcohol. When a quick effect is desired, the drug in the form of powder should be employed. In certain forms of kidney disease the powder may prevent threatened attacks of anæmia. The powdered digitalis-leaves are very much increased in potency by the addition of calomel, not only in the dropsies of heart affections, but also in that occurring in emphysema, marasmus, and in liver disease. The author thinks that the cumulative effect of the remedy is exaggerated. He has given it for months without noticing any such effect.

Next to digitalis, according to the author, stands strophanthus. Comparing the two, he says that digitalis is quicker and more certain in its action, but that strophanthus has the advantage in showing no tendency to cumulation, and does not seem to lose its effect by long-continued use. Eichhorst has found strophanthus more efficacious in some cases than digitalis, especially in a case of exophthalmic goitre and in one of long-standing ascites. Sulphate of sparteine stands low in the list after the two foregoing drugs. It seems particularly applicable in cases of cardiac asthma. Next come preparations of caffeine, which have the advantage over the last-named drug from their diuretic properties. *Adonis vernalis* and *Convallaria maialis* have but very slight effect on the heart, and are uncertain diuretics. In addition, they are likely to cause nausea and vomiting.

Regarding Oertel's method the author expresses himself as follows: In all forms of cardiac weakness it is advantageous to diminish the quantity of fluid ingested; the amount of fluid allowed should always be in proportion to the quantity of urine excreted. In reference to bodily exercise one should observe the greatest caution. Violent exercise may cause overdistension of the heart, and consequent sudden death. This is especially likely to happen in cases of fatty degeneration of the heart muscle. On the other hand, in cases of retarded action of the heart, from the accumulation of subpericardial fat, methodical exercise is advantageous in freeing the heart from its mechanical burden.

Uses of Cannabis Indica.—Dr. McConnell, Surgeon-Major, Bengal Medical Service ("Practitioner," Feb., 1888), draws attention to the well-known fact that *Cannabis indica* is likely to deteriorate by keeping or storage, and hence the contradictory results often experienced with the drug. He has found it of great value in anorexia consequent upon exhausting diseases—such as prolonged fevers, diarrhoea, dysentery, phthisis, etc. In such cases he has found small doses ($\frac{1}{4}$ v–x of the tincture, or gr. $\frac{1}{4}$ – $\frac{1}{2}$ of the extract) very useful. He speaks highly of it also in dyspeptic and tropical diarrhoea. In these cases the function of the liver is disturbed, the stools are of a clay color, and, in addition to this, there is usually an induced irritability of the intestine. An occasional dose of blue pill or calomel should be given in conjunction with the cannabis, which may be prescribed according to the following formula: R Tinct. cannab. indic., $\mathbb{M}$ x–xx; bismuth. subnit., gr. x; mucil. acac., 3 ss.; spt. chloroformi co., $\mathbb{M}$ xx; aqua cinnamomi, $\frac{3}{4}$ j. This mixture may be given before or after food, preferably the latter. In cases of chronic cardiac disease and in chronic Bright's disease the drug has proved a valuable hypnotic in the author's hands.

A Substitute for Cod-liver Oil.—Mering, of Strassburg ("Therap. Monatsbl.," Feb., 1888), thinks he has found a valuable substitute for cod-liver oil in olive oil which contains 6 per cent. of oleic acid and is partially saponified. To this mixture he has given the name of lipanin, and he says it can be given in large quantities without deranging the digestive organs. He has given the remedy to forty patients, thirty of whom were children, to whom it seems particularly adapted, on account of its not disagreeable taste. Children were given as much as from one to four teaspoonfuls daily, and adults from two to four tablespoonfuls.

The Use of Strychnine as a Hypnotic.—Brunton ("Practitioner," Jan., 1888) has had excellent results with strychnine in cases of insomnia due to overwork and worry, especially in that due to overwork. He argues very plausibly that the reason such persons can not go to sleep is that they are overtired. Now, if we can make them less tired, natural sleep will occur. This may be accomplished in many instances by giving a little alcoholic stimulant or some warm beef-tea. But these simple measures frequently fail, and it is well then to try strychnine in doses of $\frac{1}{100}$ of a grain or more, or the remedy may be given in

the form of *nux vomica*, in doses of from five to ten minims of the tincture.

Antipyrine in Pertussis.—Sonneberg ("Dtsch. med. Woch.") speaks very highly of antipyrine in whooping-cough. He gave it in seventy cases, and asserts that it proved more efficacious than any other remedy. He administered 0.01 gramme (gr. $\frac{1}{10}$) to very young infants, and increased the dose according to age. Adults were given one gramme (gr. xv) at a dose. The remedy was given four times daily, the last dose before going to bed. The infants took the medicine very readily dissolved in some raspberry syrup. Under this treatment the affection lasted usually from three to five weeks, and very rarely did more than six or seven attacks occur within the twenty-four hours. The appetite and nutrition improved when antipyrine was given in the later stages, the attacks became less violent, and the expectoration was easier. In a few cases the good effects were not noticeable until two or three days had elapsed after the treatment had been begun. The author had never observed collapse as a result of the treatment. Five cases of the seventy were attended with complications, two of which were pneumonia, and one patient succumbed. [The dose as stated seems rather small. We have given as much as half a grain at a dose to infants of six months of age, and the results have been satisfactory. So many remedies have been vaunted as specifics in pertussis and have been found wanting, that an author who speaks of a new remedy in that affection in language of moderation inspires confidence.]

Inhalations and Hypodermic Injections of Sulphurous Acid in Tuberculosis.—Davies ("Bull. gén. de thér.," Feb., 1888) discusses at some length the method of preparation and inhalation of sulphurous acid in phthisis. He alleges the usual good results for this form of treatment. The cough, expectoration, and night-sweats cease, the patient gains in flesh, and the physical signs show that the lesion is undergoing improvement.

M. Deschiens (*ibid.*) has introduced sulphur candles which, on being burned, generate a certain amount of sulphurous-acid gas. He has invented also an ingenious lamp for the combustion of sulphur, and which indicates the quantity of gas given off.

A Study of Hydrastis Canadensis.—Givopiszew (*ibid.*), on the grounds of an extensive experience with the drug, makes the following deductions: (1) The aqueous extract, even in very large quantities, does not give rise to toxic effects in warm-blooded animals. (2) It always produces a lowering of the blood-pressure without any previous augmentation. (3) It always excites contractions of the uterus, which are most intense in advanced pregnancy and shortly after parturition. (4) A larger quantity of the drug may provoke premature labor in advanced pregnancy.

The author makes the following clinical *résumé*:

(1) *Hydrastis canadensis* is an excellent remedy in uterine hæmorrhage due to inflammation and malpositions of the uterus. (2) The contractions evoked by hydrastis are less intense than those caused by ergot. (3) The employment of the drug is not attended with any inconvenience; it may be given for a long time without giving rise to any gastro-intestinal trouble.

[From a considerable experience with the drug, we may say that we have found hydrastis of very little value in uterine hæmorrhage due to malpositions of the uterus or to circumuterine inflammation. We have found it most efficacious in the hæmorrhage due to chronic endometritis or subinvolution, and in those cases where by the method of exclusion the diagnosis was made of granular degeneration of the endometrium. In the latter condition, however, we prefer using the curette.]

The Internal Use of Ichthyol.—Nussbaum, of Munich ("Zeit. für Therapie," Jan. 15, 1888; "Ther. Gaz."), has been making a study of the internal uses of ichthyol. He states that he has found it efficacious in all diseases in which there is hyperæmia and an enlargement of the capillaries. As the drug contracts these enlarged capillaries it can easily be understood why it acts so beneficially upon asthmatic complaints, digestive troubles, and those neuralgias of the pelvis which are undoubtedly more or less due to circulatory anomalies and vascular enlargements. This explains also why ichthyol is at times used without avail in similar diseases. The author's experience shows that the drug is most efficient in that class of painful neuralgias of the bones, joints, and muscles which is accompanied by difficulty in moving and which

for months had been treated by other remedies. In cases of gouty inflammation, where the motion of the limb or joint had been greatly impaired and every movement was accompanied by a cracking sound, as soon as the ichthyol treatment was commenced the pain first subsided, and soon afterward the stiffness gradually disappeared and movements became both possible and painless. He gave the remedy night and morning in doses of gr. viijss. in pill-form. As soon as the desired effect has been obtained the use of the drug should at once be discontinued, in order that the patient may not become accustomed to it. No harmful action of the drug was ever observed to follow even the largest doses.

Miscellany.

The Autopsy in the Case of the late German Emperor.—The "British Medical Journal" publishes the following translation of a medical protocol concerning the result of the examination of the body of his Majesty the late Emperor and King Frederick the Third:

"Schloss Friedrichskron, June 16, 1888.—In the neck there is a stitched-up linear wound $6\frac{1}{2}$ centimetres long, with rather dry edges, on the right side of which is situated a flat, pale protuberance, 2 centimetres high, 1.5 wide, and 0.5 thick. Inside the wound is a large quantity of cotton-wool with bismuth, after the removal of which a cavity is left measuring 5 centimetres in depth and almost as much in length, the opening of which, after removal of the stitch, gapes to the extent of about $2\frac{1}{2}$ centimetres. Moreover, the edges of the wound are tolerably hard, rather raised, and moderately tense. An incision was next made in the middle of the sternum and from thence carried subcutaneously upward on the right by the side of the wound in the neck up to the incision made over the carotid artery on the occasion of the injection.* An incision made through the nodule above mentioned revealed a faintly reddish and, in the deeper parts, rather whitish, moderately compact tissue, from which a whitish juice escaped on scraping. The nodule was situated in the skin and partly in the subcutaneous tissue, but the underlying muscles were entirely free.

"A similar incision was next made on the left side. Here also the muscles on the lateral parts were normal, but in the upper parts they were very tense. Immediately in front of the larynx there was a large tumor on the left side, in the deeper parts of which a medullary-looking infiltration was seen.

"On more extensive exposure of the thorax considerable ossification of the first rib on the left side became visible. On opening the chest, the lungs, which were pale gray, filled the pleural sacs almost completely and covered the heart. On the left side could be seen several small prominences, beneath which could be felt hard nodules covered with layers of loose connective tissue. Only at one place, near the anterior border, there was a fairly well defined lobular polygonal area, with dull, rather uneven surface. The left lung, on being pulled out, appeared outwardly quite healthy at its posterior, lower, and upper aspects; it was everywhere full of air, down to the lowest fringes of the lower lobe, close above the diaphragm.

"Very slight hypostatic congestion; the collapsed patches in the base contained dilated bronchial tubes, partly surrounding which were layers of extravasated blood. On section, a large number of foci were found in the interior of the lobe, most of which showed much hæmorrhagic infiltration round about, and presented a granular surface on section, while in the center were a large number of smaller yellowish-white nodules arranged in groups. In some places the foci were of the size of a pea, and contained material resembling pus; in others the whole mass was still solid. Scattered throughout the upper lobe were found similar very pale foci, in which a large number of small yellowish nodules were closely packed together.

"In the foci in the anterior border, which have already been mentioned, very thick discolored clots were found inside the much-dilated bronchial tubes, while the neighboring parts showed thickening of the connective tissue. On slitting up the bronchial tubes in the lower

* For embalming purposes.

lobe, they were found dilated throughout, with thickened walls, the mucous membrane lying in longitudinal folds; inside were discolored *débris*.

"On the right side precisely similar conditions existed. The apex was perfectly free, but at the posterior and lower part of the lung almost the same conditions of collapse, together with numerous small foci, were found, and similar bronchiectases. In the pleural sacs there were no further contents. In taking out the larynx the incision was carried immediately in front of the vertebral column and just behind the œsophagus. In the anterior mediastinum a fair amount of fatty tissue was found; the glands were slightly reddened, but otherwise unchanged. The larynx and œsophagus were exposed and ligatured. On the left side of the neck close to the jugular vein was a lymphatic gland about as large as a pigeon's egg, which in its interior showed a medullary-looking, partly yellowish spot. On slitting up the œsophagus there was found, immediately behind the cricoid cartilage, a collection of brownish and whitish membranes; on pushing these aside, no trace of perforation was found. Epiglottis large, smooth; edge normal.

"The ary-epiglottic ligaments, especially the left, somewhat swollen, œdematous, but without ulceration. The space at the back between the arytenoid cartilages rather deep, but also free from ulceration. Just at the base of the epiglottis on the left side there was a medullary nodule as large as a cherry; near it was a smoother one, and still more externally some smaller (younger) ones. In addition to this there was a large surface, nine centimetres in length, covered throughout with gangrenous shreds. The lower edge was formed by the trachea. From that point to the thyroid cartilage no cartilaginous structure was found nor other tissue of the trachea.

"Of the thyroid cartilage itself only the upper portions of the wings, together with the cornua, were found. The distance of the lower end of the tracheal wound from the lower end of the ulcer measured two centimetres and a quarter. This lower edge was moderately clean-cut, extending through the mucous membrane, and presenting below small gray granulations, which covered an area of about half a centimetre. Then followed normal mucous membrane over the still existing tracheal rings. In the tissue of the still existing part of the trachea there was no evidence of cicatrization, but purely normal conditions. Herewith the examination of the body ended, and the latter was sewn up in the most careful manner.

"The macroscopic changes observed were summed up by Dr. Waldeyer and Virchow as follows: Cancerous destruction of the larynx, with secondary disease of a rather large lymphatic gland at the lower part of the left side of the neck, and a cutaneous nodule on the right side near the wound. Œsophagus unaffected. Inflammatory destruction of the upper portion of the windpipe and the neighboring parts. Numerous bronchiectases, with putrid contents. Near these, bronchopneumonic suppurating gangrenous patches."

COUNT STOLBERG-WERNIGERODE,

MORELL MACKENZIE,

(Signed) T. MARK HOVELL,

VON WEGNER,

BARDELEBEN,

LEUTHOLD,

VON BERGMANN,

VIRCHOW,

WALDEYER,

BRAMANN.

The same journal gives the following report of Professor Virchow and Professor Waldeyer on the microscopic examination of particular sections from the body of the late Emperor Frederick:

"1. The larger nodule at the base of the epiglottis shows, on the outside, still unchanged mucous membrane with cylinder epithelium, but in the interior an alveolar structure, with epidermoidal contents. The cells of the latter are large and highly developed; concentrically arranged cell-groups were not observed.

"2. The cutaneous nodule on the right side of the wound in the neck is covered with extremely attenuated, but otherwise unchanged, epidermis; the cancerous proliferation reaches close to the surface; its chief development is situated in the deeper parts, where also, here and there, 'nests,' with a concentric arrangement of cells, occur. Some normal constituents, such as sweat-glands, are to be seen between the cancerous masses.

"3. The lymphatic gland on the left side of the neck shows the highest degree of change. The normal structure has disappeared, and is replaced by a loose alveolar tissue, the spaces of which are closely

filled with epidermoidal cells having large nuclei; many of these cells possess small, bristle-like fringes (*Bürstensaume*).

"4. The contents of the bronchial tubes correspond exactly in their composition with the description given by the undersigned Professor Virchow (in his report of May 19th of the present year) on the solid particles found in the expectoration. Moreover, in certain places, a more abundant collection of small, bright fat-globules, like the globules in milk, was observed.

"5. In the foci in the lungs were found thick clusters of pus-cells, but no cancer-cells. The natural alveolar structure was still perfectly distinct."

(Signed)

RUDOLPH VIRCHOW,

WILHELM WALDEYER.

Anthropological Notes.—At various recent meetings of the *Société d'anthropologie*, of Paris, the following were among the subjects presented:

Causes of Error in Anthropology.—M. Fauvelle, in a communication on this topic, said that, through the influence of classic philosophy and of religious ideas imposed upon the brain cells in infancy and youth, an impulse was given to the mental industry of mankind which carried it inevitably into error. Thus, the place assigned to men under the name *règne humain* was a striking proof in point—an example from several mentioned in the speaker's remarks. Concerning the physiological multiplication of cells, it was very natural, when we were acquainted with the operation of gravity, to suppose, to admit even, that, when a cell had acquired a volume by nutrition which is beyond the attractive force of the nucleolus, it should divide to form two new centers of attraction for the surrounding protoplasm. Why adduce other forces than gravity, such as the so-called nervous or vital? This repugnance to bringing in physico-chemical forces to explain vital phenomena had resulted in delaying the solution of the problems of the limit of growth, of the nature and mechanism of sleep, and many others, for an explanation of which we vainly searched in the most advanced works of science in general or of physiology proper. What happened then? The "philosophers" seized upon the question, and, to show the inferiority of "science," explained everything by the light of their superstitious conjectures. "This is beyond reason," they said. But, indeed, did we know anything save by reason, by the mind of man? There was nothing hereditary but the anatomical characters of the constituent cellular elements and their various properties; those characters and properties were transmitted from generation to generation by the reproductive cells, which contained all the principles of heredity. The form oftenest resulted from the action of external agents. If medicine were not closely related to anthropology, there might be occasion to show how many incorrect views had been introduced into therapeutics by mere superstitions and prejudices—from bread pills to rabbits' spinal cords. But medicine was an art, and the arts lived by fictions only. The study of human races should give two chief results: Their origin and their classification according to the degree of evolution. To attain this double end, anthropometry alone was not enough; it must be aided by the study of languages on the one hand, and of the degree of intellectual development on the other. Of the latter, industrial pursuits (the mechanical arts, trades, etc.) were the most important manifestations. The question of embryogeny was fundamental in such researches. Remembering such "errors" as the foregoing, we might learn, in our studies, to cast aside every kind of prejudice, religious, philosophic, or other, and hold fast to the method of investigation and reasoning formulated by Bacon—observe, experiment, then deduce if possible.

In the discussion ensuing on this communication, it was stated that, if there were physiologists (such as His) who admitted as a principle that everything was mechanical in the human body, there were others who observed, and, finding only chemical, physical, and mechanical phenomena, waited, in order to see more, until observation and experimentation had shown it to them. Bacon designates such illogical reasonings as phantasms of the imagination, of tribe, and of race. They arose from prejudices of education, traditional or hereditary beliefs, received passively by the human mind during the early ages of its development. The adult intelligence freed itself from them with great effort only, by the hard work of logical examination, hard in proportion

as evidences of fact in the present were found to contradict ideas accepted in the past. Often, indeed, under the name of "philosophy," the schools gave us only a codification of time-honored ignorances, misconceptions about matter or ideas inevitable during the first phases of man's evolution. Many of the "verities" of "universal consent" were "universal" mistakes, which accorded the better with public opinion as they were the more opposed to "common sense."

Anthropology and Political Science.—Under this title M. De Lapange presented a paper which had appeared in "Revue d'anthropologie." Such a review of the subject caused expectation of something practical from a field where the work had been rather strictly scientific.

"*L'Homme*."—The first five numbers of this publication were presented to the society. It is to be hoped that its philosophico-moral excellence may be commensurate with the breadth of view suggested by the name.

Congenital Aphasia.—Apropos of a case of this disease in a child of four years, reported to the society, reference was made to various similar instances recorded in the literature of the subject. In one of them, a lad, dumb from birth until the age of six years, being much moved by an accident to one of his toys, suddenly cried out "What a pity!" From this time on he spoke.

The Anthropology of the Fuegians.—M. Hyades presented a "Summary of Answers to Questions, from an Ethnographical Standpoint, put to the Fuegians." He stated that detailed data would doubtless be found in the volume on the tribes of Tierra del Fuego soon to be published by the "Cape Horn Commission."

The late Dr. Garnett, of Washington.—At a recent meeting of the Medical Society of the District of Columbia, Dr. John B. Hamilton, the Surgeon-General of the Marine-Hospital Service, spoke as follows: "A giant among medical workers has fallen; a dauntless soul has left our midst. A gentleman, without fear and without reproach; a physician with a spotless record; a practitioner most able; a consultant, clever, courteous, and conscientious; a scholar of high repute; a medical officer skilled in the exigencies of military and naval warfare; a man of the utmost energy; a devoted friend. All these attributes were possessed by our late colleague, the fact of whose future absence from our meetings falls on more than one here to-night as a personal loss. Many of us had been accustomed to look for sympathy, support, and counsel to our departed colleague, whose wide knowledge of the world, great learning, and vast experience made it a pleasure to be associated with him. Dr. Garnett, leaving us at the age of sixty-eight, has left us the record of a life singularly complete in all that makes a gentleman and high-class professional man. Having graduated with honor, he entered the United States navy, and in due course was promoted to the rank of passed assistant surgeon. It was at this time that he made the voyage round Cape Horn and visited the Chilean coast. He wrote an interesting account of some cases observed in the service, which was published in the 'American Journal of the Medical Sciences.' He was ordered to Washington, and after marriage resigned and settled in this capital. He was engaged in active practice when the war of the rebellion came. Who shall censure him now that he followed the fortunes of his State, rather than those of the old flag? Dr. Garnett always acted true to his convictions of right, as the needle to the pole. Others might scold, sulk, and backbite if they wished, and remain under the protection of the flag while in enmity to its defenders; but not he! Business, property, peace, and comfort were exchanged for the hardships of the camp, the battle-field, and the retreat, because his convictions of the righteousness of the Southern cause forced him into the front. Brave, honest, and true Dr. Garnett! No Northern soldier but honors his hatred of hypocrisy and his courage. The war ended, his antagonisms died, and his practice was resumed with success and the reward which none envied, and all approved. He has lived as a gentleman and physician should live, and he has gone full of years and covered with honors; but, while our tears mingle with those of his immediate family, let us reflect with some satisfaction that we loved him while he lived, and honored him while he was yet in the flesh, and that he was spared the bitterness, so often accorded our great men, of meeting only envy, hatred, and detraction during life. And so, while our colleague has passed beyond our ken to the realms of the unknown

shore, the comforting thought comes to us that, while with us, he knew of our devotion and repaid us with his esteem."

The New York State Medical Association.—The sixth special meeting of the Fifth District Branch was held at Babylon on Tuesday, July 31st. The programme included the following papers: "Heart Lesions and Albuminuria," by Dr. J. G. Truax; "The Removal of a Tumor from the Internal Os, inclosed in a Membranous Sac," by Dr. William Govan.

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin" for June, the whole number of deaths reported was 8,368, including 40 from cerebro-spinal fever, 1 from typhus, 45 from typhoid fever, 56 from malarial diseases, 11 from small-pox, 233 from scarlet fever, 130 from measles, 25 from erysipelas, 61 from whooping-cough, 490 from croup and diphtheria, 811 from diarrhoeal diseases, and 94 from puerperal diseases.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 27th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending July 7th corresponded to an annual rate of 15 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 9.1, and the highest in Preston, viz., 22.2 in a thousand. Small-pox caused 7 deaths in Preston and 1 in Bradford.

London.—One thousand two hundred and eleven deaths were registered during the week, including measles, 23; scarlet fever, 10; diphtheria, 29; whooping-cough, 31; enteric fever, 7; diarrhoea and dysentery, 51; simple cholera and choleraic diarrhoea, 3. The deaths from all causes corresponded to an annual rate of 14.8 in a thousand. In greater London 1,502 deaths were registered, corresponding to an annual rate of 14.2 in a thousand of the population. In the "outer ring" 6 deaths from whooping-cough and 6 from diphtheria were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending July 7th in the sixteen principal town districts of Ireland was 19.2 in a thousand of the population. The lowest rate was recorded in Drogheda, viz., 0, and the highest in Wexford, viz., 29.9 in a thousand. In Dublin 137 deaths were registered, including measles, 3; whooping-cough, 6; enteric fever, 6; scarlet fever, 2; and erysipelas, 1.

Scotland.—The deaths registered in eight principal towns during the week ending July 7th corresponded to an annual rate of 16.2 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 9.5, and the highest in Glasgow, viz., 18.9 in a thousand. The aggregate number of deaths registered from all causes was 410, including measles, 7; scarlet fever, 3; diphtheria, 7; whooping-cough, 5; fever, 5; and diarrhoea, 10.

Netherlands.—The deaths registered in twelve principal cities of the Netherlands during the month of May, 1888, having an aggregate population of 1,129,676, corresponded to an annual rate of 22.3 in a thousand of the population. The lowest rate was recorded in Leeuwarden, 11.7, and the highest in Arnhem, 29.1.

Preston, England.—The United States consul at Liverpool, in his dispatch dated July 5, 1888, states that "the number of cases of small-pox reported since the 23d ult. is 105, and the number of deaths 7, making a total of 360 cases, 24 of which were fatal."

Santiago de Cuba.—The sanitary inspector reports for the week ending July 14, 1888, 10 cases and 9 deaths from yellow fever at the military hospital. The cases are of newly arrived soldiers from Spain.

Havana, Cuba.—Sixteen deaths from yellow fever and one from small-pox are reported for the week ending July 14, 1888.

Hong-Kong, China.—The State Department has received the following telegram, dated July 21st: "No cholera epidemic Hong-Kong." Signed Withers, consul; Jordan, health officer; Ayres, chairman sanitary board.

Notwithstanding the foregoing denial, press reports continue to state the existence of cholera at Hong-Kong.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.
Paris	July 7.	2,260,945	843	..	..	5	..	23	2	24	..
Glasgow	July 7.	545,678	191	..	..	..	..	2	..	3	..
Warsaw	June 30.	444,874	233	..	..	14	..	..	3	7	..
Calcutta	June 9.	433,219	193	25	..	..	..	..	..	..	..
Amsterdam	July 7.	389,916	140	..	..	..	..	1	..	1	..
Copenhagen	June 25.	300,000	163	..	..	..	..	2	..	2	..
Edinburgh	June 23.	262,733	60	..	..	..	..	1	..	..	..
Munich	June 17.	262,000	186	..	..	..	..	1	3	4	..
Palermo	July 7.	250,000	77	..	..	..	..	1	2	4	..
Belfast	July 7.	227,022	97	..	..	1	5	1	3	..	..
Genoa	July 7.	179,526	78	..	1	..	..	..	..	..	..
Trieste	June 30.	154,500	65	..	4	..	..	..	..	1	..
Toronto	July 14.	130,000	23	..	..	..	..	..	2	..	..
Stuttgart	July 7.	125,510	31	..	..	..	..	..	1	..	..
Bremen	June 30.	122,000	35	..	..	..	..	..	..	..	..
Pernambuco	July 3.	110,000	110	..	..	1	1	..	..	..	..
Barnen	June 30.	109,000	37	..	..	..	..	..	..	..	..
Leghorn	July 8.	101,854	38	..	..	..	..	..	..	..	..
Mayence	June 23.	65,802	28	..	..	..	..	..	..	..	..
Cadiz	July 7.	65,028	39	..	..	..	..	..	..	..	..
Merida	July 3.	48,800	26	..	..	..	..	..	..	..	..
Port au Prince	May 30.	40,000	14	..	..	..	..	..	..	..	..
Maracaibo	June 30.	40,000	14	..	..	..	..	..	..	..	..
Curacao	July 7.	25,000	5	..	..	..	..	..	..	..	..
Vera Cruz	July 12.	23,800	18	..	..	..	..	..	..	..	..
Gibraltar	July 8.	23,631	10	..	..	..	..	..	..	..	..
Macayo	June 30.	17,000	31	..	..	..	..	..	..	..	..
Kingston, Can.	July 13.	16,216	2	..	..	..	..	..	..	..	..
Cape Haytien	July 14.	15,000	9	..	..	..	..	..	..	..	..
Matamoros	July 7.	12,000	10	..	..	..	..	..	..	..	..
Laguayra	July 7.	7,428	4	..	..	..	..	..	..	..	..

UNITED STATES.

Delaware Breakwater Quarantine Station.—The American brig Tenerriffe, from Havana, arrived July 22d with 2 cases of yellow fever on board. One man died during the passage. The sick have been admitted to hospital, and vessel placed in quarantine. Since the admission of the first 2 cases, the captain, who had remained on board, was taken sick, and at once removed to hospital.

Tampa, Fla.—The following is an extract from a telegram received from the president of the Board of Health, Dr. J. P. Wall, under date of July 20th: "Not much fever in this county. Six cases in and around Plant City. No spread from cases here. All precautions taken. Guards are wanted for Plant City and Manatee village. Not over 150 people in each. Both places are infected foci. No new cases reported in Manatee."

This bureau has authorized the employment of necessary guards to aid the local authorities, as recommended by Dr. Wall.

July 24th. Dr. Wall reports: "Began inspection Tampa and ordered inspection Plant City yesterday. Two cases in Plant City. None here."

July 25th. "House-to-house inspection in Tampa will be finished to-morrow. No sickness."

July 26th. "Inspection here completed. No sickness here. Two cases at Plant City. No new ones for several days. Dr. Murray reports no new ones at Manatee."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Whooping-cough.
Philadelphia, Pa.	July 21.	1,016,758	456	..	..	3	..	17	1	3	2
Baltimore, Md.	July 21.	431,879	261	..	..	..	..	..	2	1	3
S'n Francisco, C.	July 13.	300,000	109	..	..	..	..	5	2	..	..
S'n Francisco, C.	July 20.	300,000	129	..	..	..	..	4	2	..	..
Cincinnati, O.	July 21.	255,139	117	..	..	..	..	1	..	..	..
New Orleans, La.	July 14.	248,000	133	..	..	..	..	1	3	4	..
Pittsburgh, Pa.	July 21.	230,000	86	..	..	..	..	1	2	4	2
Wash'gton, D. C.	July 21.	225,000	118	..	..	..	..	3	..	4	..
Lowell, Mass.	July 21.	72,000	34	..	..	..	..	1	..	1	..
Richmond, Va.	July 21.	63,600	44	..	..	..	..	..	..	..	..
Charleston, S. C.	July 21.	60,145	34	..	..	..	..	1	..	..	..
Reading, Pa.	July 23.	60,000	10	..	..	..	..	..	..	..	..
Mobile, Ala.	July 21.	40,000	31	..	..	..	..	..	..	..	..
Wheeling, W. Va.	July 21.	35,000	16	..	..	..	..	1	..	..	..
Youngstown, O.	July 21.	25,000	13	..	..	..	..	..	..	1	..
Newton, Mass.	July 21.	21,105	12	..	..	..	..	..	1	..	..
Schenect'dy, N. Y.	July 22.	20,000	6	..	..	..	..	1	..	..	..

Compressed Air in Pleurisy.—"Dr. Joseph Szohner, of Visegrad," says the "Lancet," "gives in a Hungarian journal an account of some cases of pleurisy with effusion, in which the compressed-air treatment appeared to exercise a most salutary effect. The patients were ordered two sittings daily. In one of the cases, where the pleura had been nearly full of fluid, which the patient refused to have taken away, it made an opening for itself, and, in spite of all that could be done, the man seemed to get worse and worse, a large cavity forming in the apex. The compressed-air treatment was then resorted to, the drainage and irrigation of the cavity being of course attended to; and after a couple of months convalescence was completely established."

ANSWERS TO CORRESPONDENTS.

No. 211.—The term is one of convenience only. The growths are not parasitic, but due to cystic degeneration of the chorion.

No. 212.—No.

No. 213.—A second examination may be allowed at the end of a year.

No. 214.—At the temperature of 59° F., 1 part dissolves in 750 parts of water.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

AN ADDRESS DELIVERED AT THE OPENING OF THE SECTION OF OBSTETRIC MEDICINE, AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

Glasgow, August 7, 1888.

By THOMAS MORE MADDEN, M.D., F.R.C.S. Ed.,
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HOSPITAL, DUBLIN; EX-PRESIDENT OF THE OBSTETRIC SECTION OF THE
ROYAL ACADEMY OF MEDICINE; PHYSICIAN TO ST. JOSEPH'S HOSPITAL
FOR SICK CHILDREN; FORMERLY EXAMINER IN OBSTETRICS AND
GYNÆCOLOGY, QUEEN'S UNIVERSITY; VICE-PRESIDENT
OF THE BRITISH GYNÆCOLOGICAL SOCIETY, LONDON.

GENTLEMEN: I gratefully appreciate the honor of my election to the presidency of this important section of the British Medical Association, which I regard as a compliment to the Dublin School of Midwifery, with which I have been long connected, rather than to an individual otherwise so unqualified for the distinction as myself. I shall therefore trust to your continued indulgence for condonance of whatever shortcomings may be observable in my attempt to discharge the duties now intrusted to me.

The present meeting of the association should, I think, be especially valued by the members of this section, for it is to Scotland, and to the genius of her sons, that the twin sciences of obstetrics and gynæcology—which we are here met to cultivate—owe their earliest development in Great Britain; and to a large extent their recent progress is traceable to the same source.

Long before there was any systematic teaching of midwifery either in Dublin or in London, and fully twenty years before the foundation in the former city of the great maternity hospital—on the staff of which I served my apprenticeship to the obstetric art—a professorship of midwifery was, in 1725, established in the University of Edinburgh, and I have had in my possession the ancient manuscript notes of the obstetric course delivered there in 1756 by Professor Young, as well as of the lectures of Dr. Hamilton, by whom he was succeeded. From that time the obstetric teaching of the Scottish schools has come down in an unbroken continuity of excellence to our own day, and its character has been amply maintained by the reputation of their alumni. Thus it was to William Smellie, a native of Lanarkshire, that our professional forefathers owed a "System of Midwifery" as far in advance of any that had preceded it as the obstetric science of these last twenty years of the nineteenth century has progressed beyond that taught in 1752 by Smellie. To the same writer is more especially due the credit of the first real improvement on Chamberlen's original forceps, as well as directions for using that instrument, as he said, "on rational and mechanical principles," which even yet might be studied with some advantage by modern obstetricians.

It was in this country also that the mind of William Hunter received its early training in that obstetric art which he afterward so successfully cultivated and practiced

in London, and of which he there became the most distinguished of all its older British teachers. Nor even in this brief retrospect can it be forgotten that in the city wherein we are now assembled, modern intraperitoneal gynæcological surgery was first anticipated in 1701 by Dr. Houstoun, in the curative treatment of an ovarian tumor by abdominal section; while more than a century later it was to another Caledonian surgeon—Mr. Lizzars, of Edinburgh, whose early ovariectomy cases were published in 1825—that the revival, although in a very different and improved form, of Houstoun's first laparotomy operation is mainly due. I shall not attempt to follow further the long history of the obligations of our art to the older Scottish schools, or pause to offer my humble tribute of respect to the memory of one of their ablest teachers—the late Sir James Simpson, whose name will be recalled as long as suffering humanity seeks relief in anæsthesia, and as long as obstetrics and gynæcology are cultivated. Nor need I here refer to the services to our branch of medicine of Dr. Matthews Duncan, who filled the position I now occupy at the last meeting at Edinburgh of this association, or allude to the well-recognized gynæcological work of Dr. Keith and of many other no less distinguished living Scottish authorities.

While willingly acknowledging how much we owe to Scotland, I can not omit a briefer reference to the similar labors of the Dublin school, although the credit of not a few of the obstetric advances that originated there in bygone years has more recently been elsewhere appropriated. Thus, for instance, the employment of version as a substitute for craniotomy, as advocated by some modern German and English writers, was first suggested in 1752 by Sir Fielding Ould, the second Master of the Dublin Hospital, and was revived a century later in the same place by the late Dr. McClinton, whose genius, erudition, and obstetric skill entitle him to remembrance even in our most oblivious of professions. In like manner the management of the third stage of labor by the method claimed as his own in the late Dr. Spiegelberg's recently translated "Text-book of Midwifery" is practically almost identical with that followed in the rotunda from time immemorial, as described several years ago in my edition of "The Dublin Practice of Midwifery." The resuscitation, moreover, of the use of the forceps, the prophylaxis of post-partum hæmorrhage, and many other improvements in the management of childbirth and the puerperal state—the introduction of which is claimed elsewhere—have, I may repeat, also emanated from the same practical school of midwifery.

The foregoing reference to the historic claims of the ancient Scotch and Irish centers of obstetric science might be readily expanded. Time, however, forbids my further trespassing either in this way or by any allusion to the better-known services of the early fathers of English midwifery, such as Raynald, Willoughby, Harvey, Cook, Chamberlen, Chapman, Giffard, Denman, and the host of other pioneers of obstetric knowledge, many of whose lives and labors are so well chronicled in Dr. Aveling's erudite "Biographical Sketches of British Obstetricians"; I shall there-

fore devote the remaining portion of this address to the more practical consideration of the results of some of the recent developments of obstetric and gynaecological science.

The progressive improvement of midwifery practice has been strikingly evinced during the past few years. Thus the pathology and preventive treatment of intra-uterine death and abortion have been freed from much of their former obscurity and difficulty by the recent writings of Dr. Priestly. The prevalence of puerperal septicæmia, by epidemic outbursts of which, in my early days, I have repeatedly seen the crowded wards of a great maternity hospital decimated, has been largely diminished by the hygienic and antiseptic measures now adopted for its prevention. Whilst if septicæmia should still occur, we are now armed with more scientific means for the curative treatment of this disease which some years ago was generally classed among the incurable *opprobria* of our art. In like manner, by the adoption of improved methods for the prevention and treatment of post-mortem hæmorrhage, that once frequent source of obstetric mortality has been almost completely removed. At the same time the throes and pains of labor have been rendered more endurable by the employment of comparatively safe anæsthetics, such as the mixture of two parts of ether and eau de Cologne with one of chloroform, which, for nearly twenty years, I have found a generally efficient and agreeable anæsthetic in such cases. Moreover, by judicious instrumental assistance, we may now, in many instances, safely abridge the duration of that formerly often long-protracted period of parturient suffering, which, when a student, I have too often seen allowed to continue unrelieved for forty and fifty, and even for eighty, hours and upward. Lastly, the former appalling frequency of child-destroying operations has been reduced in an exact proportion to the increasing employment of the forceps. Nor have the limits of the utility of this instrument, as a substitute for the cephalotribe, craniotomy forceps, cranioclast, *et hoc genus omne*, been even yet fully reached.

The Uses of the Forceps, and its Improvement.—The main reason why any embryotomic instruments are still included in the ordinary obstetric outfit appears to me the fact that most midwifery practitioners do not recognize sufficiently the compressive power of the long forceps, and, moreover, rely exclusively on some one form of forceps, whether the head be above or within the pelvic cavity, and without reference to the kind of mechanical power—tractile, lever, or compressive—that may be specially required in each case. Desirable as it may be to carry as few implements as possible in the obstetric bag, it is, nevertheless, impossible to combine in any one instrument properties so distinct as those referred to. In operative midwifery there should surely be some definite proportion between the power employed and the resistance to be overcome. Hence it seems about as needless to resort to an instrument of such compressive and lever power as the double-curved long forceps to assist delivery in an ordinary case of delay in the second stage as it would be to employ a steam-hammer to crack a walnut.

I have endeavored to carry out these views in the two instruments now exhibited, which have been considerably

modified and, as I think, improved in the course of experience since I first demonstrated the use of their original models. The first is a short straight traction forceps, the blades of which are only six inches in length and are so curved as to fit the foetal head very exactly, and so widely penetrated as to allow the scalp to protrude when applied, and thus protect the maternal passage during extraction. This instrument, as may be seen, is very portable, and, locking loosely, is easily applied; and being a really efficient tractor, as I have proved by experience of its use in upward of three hundred cases, may therefore be employed in nine tenths of the cases in which any instrumental assistance is required—namely, those in which delay arises from inertia in the second stage of labor.

The second instrument shown is intended only for cases of difficulty from disproportion or pelvic flattening. The blades are therefore of considerable length and strength, and are approximated by a powerful screw, by which the amount of compressive force exercised may be exactly regulated. The affixed traction-rods are closed or separated by a simple mechanical arrangement. This instrument, as will be seen, is not only a tractor and lever, but is a compressor of great power, with which the foetal head may be gradually molded out and compressed within the limits of viability, so as to admit of delivery through pelves from which a living child could hardly be otherwise extracted. I need hardly add that such an instrument requires very great caution in its use, and should be employed only in the exceptional cases for which it is designed, and as a substitute for embryotomic implements.

Recent Progress of Gynæcology.—The development of this branch of medicine since our association last met in Scotland has been still more remarkable than that effected in the practice of midwifery during this period. Thus, for example, only a few years ago many of the most frequent forms of intra-uterine and circumuterine disease were beyond the diagnostic and remedial reach of gynæcologists, then unprovided with those means of rapidly and thoroughly dilating the cervical canal, or with the many other methods of direct investigation by the aid of which any well-educated practitioner may now recognize and treat intra-uterine, ovarian, tubal, and other intraperitoneal and pelvic complaints that baffled detection or treatment. Nor in those pre-antiseptic days could have been anticipated the wonderfully successful results since realized from laparotomy operations, and more especially ovariectomy, as well from some still more recent developments of intraperitoneal surgery in tubal and other diseases, including even peritonitis and cancer of the uterus, the latter a subject which has been recently elucidated in Dr. J. Williams's Harveian lectures. In the last-named cases, however, it is a debatable question whether we should persevere further with the intraperitoneal procedure for the removal of the uterus introduced by Freund, in view of the better results obtained from the vaginal method advocated by Dr. Martin, of Berlin; and also whether in the latter case the operation should be limited, as recommended by Dr. Williams and Dr. Braithwaite, to the removal of the cancerous portion, and not be extended to the extirpation of the entire uterus.

Only within the time referred to has the general correctness of Dr. Graily Hewitt's views with regard to the importance and treatment of uterine displacements and flexions become commonly accepted. Neither were the symptoms and appropriate treatment of ovarian displacements understood until a more recent period, when attention was directed to them by Dr. Barnes's able paper on this subject, in the "American Journal of Obstetrics," and in a minor degree, perhaps, also by a memoir of mine on the same topic in the "Transactions of the Irish Academy of Medicine." Nor is it so long since the bearing of cervical lacerations on pelvic pathology, as first demonstrated by Dr. Emmet, of New York, first became recognized in this country. Finally, the diagnosis, importance, and curability of diseases of the uterine appendages, such as hydrosalpinx and pyosalpinx, together with several other of the causes of female suffering and death, were, in like manner, practically ignored by gynecologists until within a very recent period.

Influences of Prejudice and Fashion in Gynecological Progress.—In the history of many of the successive developments of gynecology just referred to we may observe proofs not only of the progress of our art, but also of the two causes which have temporarily retarded its advancement. The first is the opposition generally offered in matters medical, as in most others, to all innovations, and the consequent reaction by which the pendulum of professional opinion is swung from one extreme to the other, exaggerated over-estimation thus generally succeeding to earlier adverse prejudices. The second is the potent influence of fashion on medical opinion and practice; for, strange as it may be why this should be the case, it is, nevertheless, true that—

"In physic, as in fashion, we find

The newest is ever the rage of mankind."

This is strikingly illustrated in gynecological practice, in which it now seems almost as much the fashion to ascribe various obscure complaints of women to ovarian and tubal disorders as, a few years ago, it was to attribute similar ailments to uterine flexions and displacements; or as, ten years earlier, it was the mode to credit them to chronic inflammation, or what was then regarded as ulceration of the neck of the womb; or yet, a century previously, to set them down, in the phraseology of our professional ancestors, to "the spleen" or "the vapors."

Gynecological Specialism and Woman's Place therein.—In this connection I may venture to observe that I can not agree with those who are opposed to the admission of women into the practice of our department of medico-chirurgical science for which their sex should apparently render them so especially adapted. I can see no valid reason why any well-qualified practitioner, male or female, should not be welcomed among us. Nor, if there are women who prefer the medical attendance of their own sex, does it seem fair that in this age of free trade they should not be afforded every opportunity of exercising their discretion in a matter so personal to themselves. For my own part, I greatly doubt that, in these countries at least, "the lady doctors" (as they are termed) will ever replace the ruder sex in the general estimation of their sick sisters. But, if not here, elsewhere

there is unquestionably an ample field for female practitioners, and more especially in India and other Oriental countries, where millions of suffering women and children are fanatically excluded from the possibility of any other skilled professional assistance; and I therefore think that such practitioners are entitled to admission into our ranks in the British Medical Association.

Laparotomy in Relation to Gynecology.—Foremost among the proofs of modern gynecological progress the most signal is that afforded by the results of abdominal surgery in the treatment of ovarian tumors, as demonstrated in countless cases at home and abroad and in this country, more especially in the practice of Sir Spencer Wells, Dr. Keith, Mr. Lawson Tait, Dr. Bantock, Dr. Savage, Mr. Thornton, and other specialists in this department of operative surgery, which, not very many years since, was so loudly and unfairly decried. Whether this should encourage the present frequency of resort to laparotomy in the various other intraperitoneal morbid conditions in which it is now advocated or not is, however, another question, and one which, I think, may be still advantageously reconsidered.

Treatment of Fallopian-Tube Diseases.—With respect to the tubal diseases, to the operative treatment of which so much attention is now devoted, and which I have elsewhere fully discussed, I shall only here again observe that, while recognizing the fact that in some instances of pyosalpinx and hydrosalpinx the removal of the diseased uterine appendages affords the only available means of treatment, and fully appreciating the surgical skill by which operations for this purpose have been brought to their present perfection, I have not, in my own experience, found laparotomy operations as generally necessary in such cases as they are apparently now deemed by others. On the contrary, I am confirmed, by increasing observation, in the belief that in some instances these tubal diseases, more especially in cases of hydrosalpinx, may terminate favorably without any surgical treatment, and, moreover, that in other cases such collections, whether purulent or serous, may be evacuated by cautious aspiration through the vaginal roof. Very recently I had an opportunity of again proving the advantages of this method of treatment in the case of a lady who, after many months of suffering, was sent to me from a distant country to have the affected uterine appendages removed, but whom I succeeded in relieving of her trouble, with the assistance of my friend, Dr. Duke, by aspirating the Fallopian tube, and thus removing about ten drachms of serous fluid from the distended duct. I would therefore still urge the expediency of a fair trial of other less serious methods of treatment before resorting to the extirpation of the uterine appendages in these cases generally.

Operative Treatment of Uterine Tumors.—It would be impossible, within the limits of this address, to enter at length into the consideration of a question so large and so controversial as the general necessity for surgical interposition in the treatment of uterine fibromata. This, I am glad to see, will be brought before you during this meeting by those eminently qualified to speak on the subject; and I trust that in the ensuing discussion new light may be thrown

on the comparative merits of the various intraperitoneal and vaginal surgical procedures advocated in such cases, as well as on the value of electrolytical treatment. Nor, in this connection, should the possibility of arresting the growth of these tumors in some instances, by appropriate medical treatment, as well as the greater probability of thus effectively checking hæmorrhage so occasioned, and more especially by the free administration of ergot and iodide of potassium, to which I have elsewhere called attention, be entirely lost sight of.

With regard to the former, or surgical method, I may, however, venture to repeat that, in the majority of cases of interstitial and sub-peritoneal uterine tumors, no active treatment whatever appears to me essential, inasmuch as such growths seldom, if ever, destroy life, and in many cases become arrested in their development and quiescent in their symptoms at the menopause, or may even possibly disappear altogether in the course of time. The latter event is, however, far too exceptional to have much influence in determining the expediency of surgical treatment, and more especially that by oophorectomy, which is unquestionably called for in the case of fast-grown fibroids, giving rise to otherwise incontrollable urgent hæmorrhagic or pressure troubles, particularly when occurring in young patients.

With regard to hysterectomy, although exceptional cases may occur in which this procedure is necessitated, the average mortality that has followed its performance is such as to forbid its general employment, as an operation of election, in a disease the average mortality of which, when left to nature, is so comparatively insignificant. While as to myotomy, in view of its too common results, I can only repeat that it would appear to me a method by which a patient may be effectually removed from a tumor, rather than as an operation by which a tumor can be safely removed from a patient.

Treatment of Uterine Fibroids by Electricity.—Although I have so nearly exhausted the allotted limits of this address, I can not omit a few words in reference to the latest and most promising of the methods available in the treatment of uterine fibromata—namely, that by electricity. Within the past year and a half I have had occasion to try this method, in some ten instances, in my hospital and private practice; and so far as the arrest of hæmorrhage is concerned, the result was most satisfactory, the bleeding being thus arrested in six of these cases. But with regard to the cure of the disease from this treatment, the possibility of which had been demonstrated in the experience of Dr. Apostoli and others, who had employed it on a much larger scale, I can only say that while I have not as yet seen the complete subsidence of the tumor effected in any of the cases so treated by myself, in three of them its apparent bulk became distinctly diminished even after six weeks' or two months' treatment of this kind. It should, perhaps, be added that in all these instances I used Dr. Apostoli's original plastic clay abdominal electrode, the current used being, of course, monopolar and acting directly on the growth by the intra-uterine pole, and was obtained from a powerful Leclanché battery of an estimated maximum current strength of 250 milliampères. In the first of my cases I employed

the electrolytic negative current, but after a little experience I abandoned this, and in the subsequent trials used only the positive current, which, although non-energetic as a galvanocaustic, is far less liable to give rise to trouble, and, from its decided hæmostatic action, is more suitable to these cases of large hæmorrhage-producing tumors, in which alone this or any other active treatment seemed to me generally necessary.

If, however, the results obtained by Dr. Cutter, and, still more conspicuously, those recorded by Dr. Apostoli, from the employment of electricity—namely, permanent benefit in ninety-five per cent. of the cases of fibromata thus treated by him—should be confirmed, as I hope may possibly be the case, by the experience of those who are here about to discuss this disease, then we might well congratulate ourselves on having at last arrived within sight of the long-sought-for safe and effectual curative treatment of uterine tumors.

The foregoing *résumé* of some of the recent developments of obstetric and gynecological science, imperfect as it is, affords a sufficient vindication of our branch of medicine from the aspersions which have been poured upon its followers. These advances and their results are surely more than enough to show that those by whom so much has been accomplished are engaged in no narrow specialism; but, on the contrary, should rank high in that noble and ever-progressive profession of medicine whose great objects are the prolongation of life and the relief of every form of human suffering.

In conclusion, gentlemen, it only remains for me again to thank you for the honor you have here conferred upon me and for the patience with which you have listened to this address.

Original Communications.

THE SPHENOID BONE: SOME OF ITS POSSIBLE FUNCTIONS.

BY J. A. MALONEY,
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IN making tests to ascertain the conditions of those with impaired audition, preparatory to applying an otophone in the case, either as a restorative agent or simply as an aid, I have been very much impressed with a singular effect in some cases of profound hardness of hearing when I had reason to suspect partial ankylosis of the ossicula, or adhesions of the same resulting from catarrh of the middle ear. I observed that a very low voice could be heard when the ear-piece of the otophone was placed upon that portion of the temporal bone which joins the great wings of the sphenoid, while a comparatively loud voice could not be heard when placed over the meatus auditorius externus. This result was so striking in many cases that I determined to ascertain the cause if possible. To this end I took up the bones of the skull and examined them for conductivity of sound

vibrations, the determination of which was reached as follows:

The bone was clamped in the standard (A, Fig. 1) which was rigidly affixed to a base of iron weighing sixteen pounds. At one end of the bone was placed in light contact a button suspended upon a rod having a curved projection at its top to allow the button to swing clear of its support (Fig. 1). The other end of the bone was gently struck with a small hard-rubber mallet, and the space through which the button was projected noted.

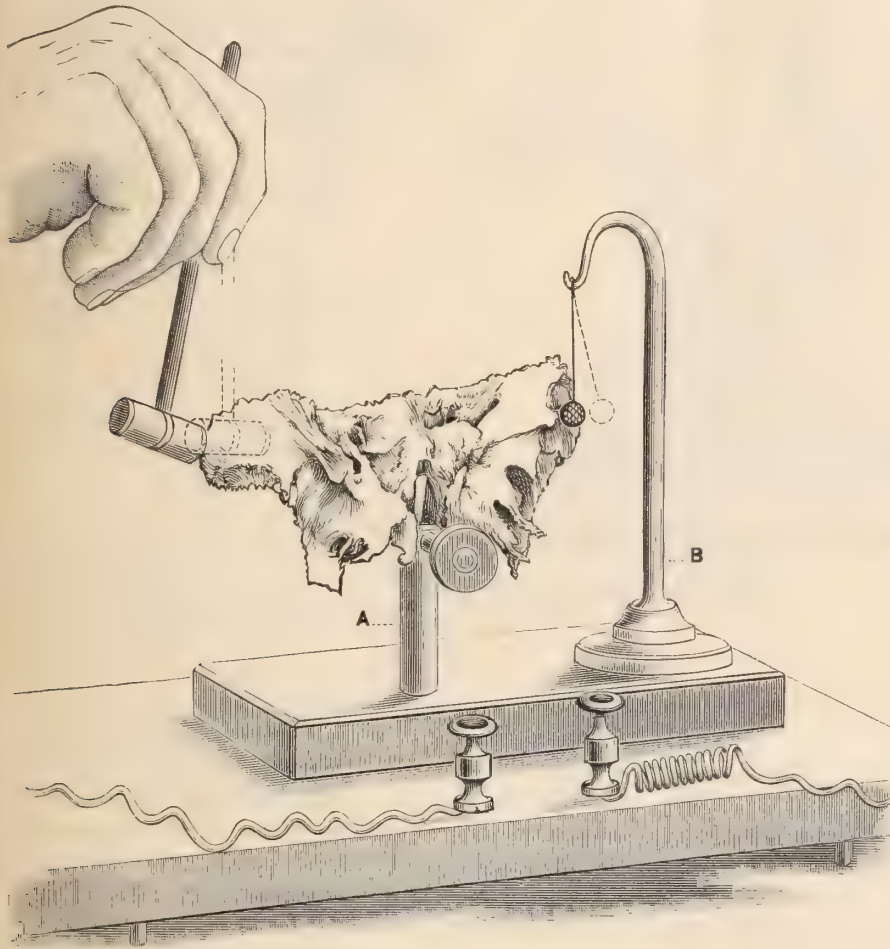


FIG. 1.

The results upon different bones were as follows:

Frontal, very hard blow, slight disturbance of ball, without projection.

Occipital, the same. Parietal, the same. Ethmoid, less than the former.

Sphenoid, a very slight tap on one great wing gave great projection from the other wing, and scratching with or rolling of the mallet over the surface of one wing caused the button impinging upon the other to be agitated.

The sphenoid was then made to communicate its vibrations to the diaphragm of a microphone in electric circuit with a telephone receiver, as shown in Fig. 2.

In this test a very fine thread of silk, held at one end, was drawn lightly over the free wing at B, and the same could be heard distinctly in the receiving telephone C.

Breathing gently through a tube against the wing at B

would be heard in the receiver. Breathing through a tube with impact of air at D—D being the point at which the optic nerve and the internal carotid artery pass through—gave the same results.

The temporal bone was then substituted for the sphenoid, and the only point which gave results similar to that of the sphenoid was when the two tests were made upon that portion of the petrous or pyramidal process known as the jugular fossa.

From the foregoing experiments, may not the following phenomena be traced to the sphenoid and temporal bones as factors in their development?

1. *Localization of Sound*.—The direct or maximum result in localization is probably due to aerial conduction through the meatus auditorius externus. The indirect or bone conduction being through the sphenoid (from one wing to the other, and thence to the internal ear upon the opposite side), thus probably gives a maximum and minimum sensation by which the mental act of localization of sound is accomplished.

2. *Tinnitus Aurium*.—Owing to the extreme susceptibility of the sphenoid to conduct minute sound vibrations, may not the pumping sounds so frequently mentioned in this form of "noise in the head" be due to aneurysm or some abnormal condition increasing in intensity the flow of blood through the internal carotid, ophthalmic, or great meningeal arteries in their passage through this bone, or to the same factors through the jugular, in its relation to the temporal bone?

(I would here state that I have produced the "singing sounds"

by getting a very loose contact in a Blake telephone transmitter, the contacts of which would be for the purpose analogous to the articulations of the malleus and incus, from which I have concluded that "singing sounds" are due to slight dislocation of the malleo-incudal joint placed in vibration by some subjective cause, and continued by reason of the membrana tympani acting as a retractile spring, thus producing the same effect as the "Neff hammer," or make and break upon the induction coil.)

Autophonia.—There are three theories for this phenomenon which deserve special mention:

1. That of Dr. Gustav Brunner, who says that alterations in the hearing of one's own voice are phenomena of resonance, a vibration of air in the middle ear shut in by closure of the tubes.

2. That of Dr. Gruber, which holds that autophonia is



FIG. 2.

a "consonance phenomenon, caused by swelling of the mucous membrane of the middle ear."

3. That of Dr. Samuel Sexton. This holds that the "phenomena of autophonia are due to a disturbance of the normal equilibrium of tension in the transmitting mechanism of the ear."

When the Eustachian tubes are closed entirely (by which equal pressure upon each side of the membrana is prevented), may not the strong vibrations of air set up in the larynx and pharynx (the mouth cavity being known as a powerful resonator) be sent to the seat of audition, through the agency of the sphenoid bone, particularly at the part situated between the ethmoid and occipital bones?

Color Audition.—This phenomenon was first brought to the attention of the scientific world by Dr. Nussbaumer, of Vienna, who, when a child, was engaged with his brother one day in striking a fork against a glass to hear the ring, when he discovered that he saw colors at the same time that he perceived the sound; and so well did he perceive the color that, when he stopped his ears, he could divine by it how loud a sound the fork had produced. Dr. Nussbaumer was afterward able to add to his own observations nearly identical ones made by a medical student in Zurich. Later on M. Pedrono, an ophthalmologist of Nantes, observed the same peculiarities in a friend.

In these cases musical sounds gave sensations varying the

color according to the instrument played upon, thus showing the dependence of the phenomenon upon the *timbre*. For instance, the saxophone gave yellow sensations; the clarionet, red; the piano, blue. When numbers and words were used, the following results were obtained in cases mentioned in an article, "Color of Words," by E. A. Newell, "Popular Science Monthly" for December, 1887: 1, Black; 2, light cream; 3, dark cream; 4, brownish red; 5, black; 6, tan-color, or cream; 7, greenish black; 8, dark straw; 9, mud-color; 10, black; 11, black and straw; 12, light cream; 13, dark straw-color; 14, light brown.

Following are some familiar names, and the color of each, and also the letters of the alphabet:

Mary, dark red; Abbie, tan; Lucy, dark blue; Richard, light gray; Atlanta, steel-gray; Charlotte, light red; Claire, light blue; Newcomb, dark red; Lincoln, black; Morse, brown; A, light straw; B, gray; C, tan; D, blue; E, black; F, black; G, light straw; H, red; I and J, black; K, blue; L, black; M, brown; N, dark blue; O, light red; P, light green; Q, blue; R and S, light straw.

I here quote from an article in the "Popular Science Monthly" for August, 1883, by Henri de Parville, and previously published in "Le monde de la science et de l'industrie": "Popular expressions are often significant. 'I saw three dozen lights of all colors,' or some such expression, may frequently be heard from persons who have received vio-

lent blows on the head or face. Under the influence of shocks of this kind the eye seems to see infinite numbers of sparks. Shocks of a certain class impressed upon the nervous system seem to have the faculty of producing phenomena of light. This remark has been suggested by the facts we are about to relate, which lead us to suppose that sonorous vibrations are susceptible in certain cases of provoking luminous sensations. There are, in fact, persons who are endowed with such sensibility that they can not bear a sound without at the same time perceiving colors. Each sound to them has its peculiar color; this word corresponds with red and that one with green; one note is blue and another is yellow."

May not color audition, in view of the readiness with which the sphenoid bone takes up and delivers vibrations, be due to mechanical stimulation of the optic nerve by impingement of the same upon the sphenoid bone in its passage through the optic foramen?

VARICOCELE IN THE FEMALE: WHAT IS ITS INFLUENCE UPON THE OVARY?*

By A. PALMER DUDLEY, M. D.,
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FROM a valuable paper read before this association at its first meeting, by Dr. H. C. Coe, entitled the "Exaggerated Importance of Minor Pelvic Inflammations," I make the following quotations: These "thickenings, increased tension, or whatever it is, which we find at the examining table and promptly enter in our case-books as cellulitis," frequently vanish after death, when the natural tension of the tissues has disappeared." That remark impressed me very much, and was parent to the thought, What pathological condition can exist in the broad ligament during life, giving rise to pain and symptoms simulating cellulitis, and still be found absent post mortem? It was certainly an interesting question, one I deemed well worthy patient search for an answer, and if I can be in any way instrumental in arriving at a correct solution by bringing the subject before this society for discussion, I shall feel that I have been amply rewarded for my efforts. After a careful study of the anatomy of the broad ligament, together with the experience I received from my service in the Woman's Hospital, and the results of such investigations as those set forth by Dr. Coe, it seemed to me that the condition must be one due to disturbances of the normal pelvic circulation, and I began to look the subject up. Hence the title of my paper.

Some doubts may arise in the minds of my hearers as to just why I should use the title "varicocele in the female" when the location of the condition I propose to consider is in the broad ligament. The only explanation I shall offer is the following: That the terms varix and varicocele are used synonymously is granted, but while the term varix is used to denote the existence of a dilated and knotted or tortuous vein in any part of the body, the term varicocele signifies a blood tumor, and is applied to a dilated condition of the spermatic veins.

Now, as all writers upon anatomy whom I have been able to consult declare the ovarian veins in the female to be the analogue of the spermatic veins in the male (some authorities even using the term spermatic for both sexes), and accredit them with performing analogous functions—that of returning the venous blood from the testicle and ovary toward the heart, by emptying it on the right side of the body into the inferior vena cava, and on the left side into the left renal vein—I feel quite sure the term is not misapplied when referring to a dilated and tortuous condition of the veins in the broad ligament.

To properly understand any pathological condition in the human system, one must first have a correct knowledge of the normal anatomical condition of the parts involved. This is a difficult matter to do with respect to the broad ligament in the female, owing to the various changes which it is subject to during the child-bearing period, which, though not pathological, but rather physiological, are still changes that modify the anatomical structure and relation of the parts "for the time being" to a marked degree. If we pause for a moment and consider the anatomical relation and structure of the broad ligament while the uterus is in a state of rest, and then consider the changes which must certainly take place in the ligament and its vessels during the growth of a fœtus, the expulsion of the latter, and the period of time required for the proper involution of the pelvic organs, bearing in mind the accidents which are so liable to and do so frequently happen during this process, we certainly shall be led to the conclusion that varicocele in the broad ligament of the female can not be a rare condition.

Let us consider for a moment the anatomical make-up of the broad ligament in a woman whose uterus has never been impregnated. Here we find it a thin double layer of serous membrane, stretching across from each side of the body of the uterus to the inner surface of the pelvis, thereby dividing the upper portion of the pelvic cavity into two parts, an anterior and a posterior. Along its superior or free border runs the Fallopian tube, and to its posterior and superior surface is attached the ovary. Beneath the tube and ovary, between these two layers of thin serous membrane, which is their only support, lie the blood-vessels and nerves that supply and nourish the uterus in its normal state and maintain the life of the fœtus during the term of utero-gestation. A correct idea of the length, breadth, and thickness of these ligaments can readily be ascertained if we first consider the size and position of the uterus. The latter, pear-shaped, with an average transverse diameter of two inches, if in its normal position, occupies the central axis of the pelvis, the average transverse diameter of which is about five inches at its superior strait. Now, should we measure transversely across the fundus of the uterus, when in its normal position of slight anteversion, to the brim of the pelvis, such a measurement would only allow of an inch and a half space to be occupied by the broad ligament; but such I feel quite sure would not be a correct anatomical measurement of the ligament, for the latter, being attached to the pelvic wall on a line much posterior to its attachment to the uterus, allows of greater length of ligament; and laparotomists, who have frequent occasion to examine the broad liga-

* Read before the Alumni Association of the Woman's Hospital at its third meeting.

ment in the normal and abnormal condition, will bear me out in the statement that the average length of it is from two inches to two inches and a half, while its depth is dependent upon the size and position of the uterus. Its thickness when in the normal condition is, as I have already stated, but trifling. It stands up as a thin partition-wall between the rectum and ovary and bladder. From this description it will be seen that the blood-vessels which course through it to supply the uterus have but very little support (especially the ovarian) from the time they leave the pelvic wall until they reach their destination, and *vice versa* with the veins on their return, while the latter are put at a disadvantage by gravity and lack of propelling force. Hence we can readily see how any undue pressure, from any cause, mechanical or otherwise, would tend to influence the blood-current through these vessels.

With this outline of the structure and relations of the broad ligament in the virgin, let us pass to consider some of the changes which necessarily take place should the uterus become impregnated. To accommodate the growth of the fetus, the uterus undergoes its gradual increase in size, which is accomplished during the first three months with the uterus still occupying the pelvis. Its increase is nearly or quite symmetrical, and, while pressing the bladder and rectum to a certain extent, it must at the same time encroach upon the broad ligament. Then the relations and structure of the latter are soon changed. Its opposing surfaces are separated by the growing uterus. The blood-vessels which it holds, receiving the stimulus and being called upon to do additional duty, increase in size also, at the same time changing their shape and position. And so the process goes on, until the broad ligament, from being a thin, quite transparent structure made up of two opposing layers of serous membrane, holding between them the small blood-vessels and nerves that supply the uterus, together with a small amount of cellular tissue and a few muscular fibers from the outer layers of the uterus, becomes a mass of blood sinuses, its superior border containing the Fallopian tube, lying perpendicular to the side of the uterus, and its two serous surfaces spread out over the sides of the organ.

This certainly is not a falsely drawn picture of the condition of the broad ligament at or near the time of parturition. When the latter is accomplished and the uterus is delivered of its contents, a retrograde process commences, and Nature makes an effort to return these broad ligaments, together with the uterus, to their normal condition, as before impregnation. Does she always succeed? No. Innumerable cases on record are evidence to the contrary. Some accident accompanies or follows delivery (laceration or cellulitis), and involution is arrested. The uterus remains large, and contains an abnormal amount of blood, the vessels being gorged and tortuous, while the overweighted uterus drags upon the ligaments, and in time displacement occurs, which still further complicates the difficulty. Is it unreasonable to believe that from such a condition the vessels of the broad ligaments, which have no lateral support for a distance of three inches along their course, should become permanently dilated and tortuous—in fact, varicose? I hope the discussion will answer this question.

After quite an extensive search for literature upon this subject, I have been able to find only one article published in this country—that by Dr. Dwight, of Boston ("Boston Medical and Surgical Journal," February 15, 1877), in which he reports the accidental discovery of a large varicocele in the left broad ligament of a subject he had prepared for demonstration before his class. The case is one of interest, and I shall have occasion to refer to it further on. Winckel, in his work translated by Parvin, makes mention of the subject, and emphasizes the fact that the condition is one of great importance with respect to certain forms of uterine disease. Klob makes the statement that in no other part of the body are phleboliths so frequently formed, caused, he thinks, by absence of valves in the veins. Brandt has often seen stones in the veins of the broad ligament of the size of peas. Barnes thinks these stones the cause of early atrophy of the uterus.

Causes.—The causes of varicocele in the broad ligament are manifold—some constitutional, others mechanical. Among the former may be enumerated: 1. Arrest of involution of the uterine and ovarian vessels, keeping up pelvic engorgement long after confinement. 2. A relaxed condition of the tissues from a low state of general health. 3. An unhealthy condition of the vessel wall; an absence of valves in the veins, allowing of blood-pressure from gravity. Chief among the mechanical causes of this condition are the anatomical relations of the veins themselves. It is a noted fact that varicocele appears much the most frequently upon the left side of the body in both sexes, and this has been demonstrated to be due to the emptying of the venous blood from the left broad ligament into the left renal vein at right angles to the blood-current from the kidney, thereby obstructing the free flow of the blood from the ligament into the general venous circulation. The spermatic and ovarian vessels being of such great length, the weight of such a column of blood also has a tendency to weaken the vessels, while still another prominent mechanical cause of this condition is the habitual constipation to which so many women are subject, and this is accounted for by the passage of the veins behind the sigmoid flexure of the colon. The latter, being distended with feces, makes direct pressure upon the veins. The veins upon the right side are less liable to this affection from not being subject to any direct pressure, and, emptying as they do into the inferior vena cava at an angle, they are provided with a valve, and thereby escape backward pressure. Displacements are a fruitful cause of this condition. Winckel emphasizes the fact in the following words: "Associated with uterine displacement is a tension of the broad ligaments, which become rotated about their transverse axes. Their outer extremities passing to the pelvic wall on either side, the infundibulo-pelvic ligament is even more distorted, and when we consider the great frequency of repositions of the uterus it is not surprising to find that they are associated with a variety of complications," which he illustrated by the results of twenty-four post-mortems, in which he found one double parovarian cyst, four myomata, four ovarian cysts, one senile hæmatometra, and, he says, of greater significance, three varicoceles in one or the other broad ligament.

From the scanty literature upon this subject, it is impossible to arrive at any correct conclusions as to the frequency of this condition, but that it exists much more frequently than has been supposed, I think careful observation in the future will demonstrate. Winekel found it ten times in three hundred autopsies, but he does not mention having made a *diagnosis* of it in the *living subject*.

Symptoms and Diagnosis.—In attempting to bring to your notice the symptoms which point to the existence of varicocele in the broad ligament, and by which I have been able to make a diagnosis of that condition, I am obliged to confine myself to my own experience and a short narration of the results obtained from it, for, as I have previously stated, I have been able to find nothing written upon the subject except the results obtained from post-mortem investigations, although medical literature is teeming with narrations of cases and methods of treatment for the various forms of varix in the male. Therefore I hope that this explanation will be sufficient apology for my lack of more positive symptoms. That which I consider the most prominent symptom (aside from those furnished by physical examination) is pain of a peculiar dull, aching character, extending up the side to the region of the kidney (and when the patient is in the erect position for some time), having its greatest intensity about that organ. Also the fact that this pain will disappear after the patient has occupied the prone position for a time, and reappear after taking the erect position. Of course there are numerous pathological conditions which may exist in the female and give rise to pain resembling this, but a careful examination and history of the case will usually exclude them. The pain is quite similar in character to that experienced by the male who suffers from varicocele, while several of the general symptoms are analogous in character, such as lassitude, a vague sense of unrest, and mental depression. These symptoms are accompanied by a history of injury at childbirth, followed by inflammatory conditions which have arrested the proper involution of the pelvic organs. Chief among the physical signs elicited by digital examination will be a thickened ligament, flexible, but tender under pressure, and transmitting a doughy sensation to the touch. Examined with the patient in the erect position, the ligament is thicker than appears by examination in the prone position, but positive evidence of the varicose condition of the vessels of the ligament can be obtained only by careful digital examination *per rectum*, after the patient has been allowed to stand for a short time. Bimanual pressure of the ligament will then readily reveal the knotted, angle-worm appearance of the vessels. Such was the method employed in the diagnosis of my cases. My experience is yet too limited to allow me to express an opinion as to the ultimate result of the procedure I am advocating, but I beg your indulgence while I lay before you the results so far obtained in the treatment of four cases of varicocele in the broad ligament:

(To be concluded.)

Yellow Fever in Jacksonville, Fla.—Two cases were discovered on Wednesday last. Active steps to prevent the spread of the disease were at once taken by the health authorities. It is feared that these cases may be the beginning of an outbreak.

THE RED BLOOD-CORPUSCLES OF LAMPREY EELS IN RELATION TO JURISPRUDENCE.*

By SIMON H. GAGE,

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In a full and adequate discussion of blood-corpuscles from a medico-legal standpoint it is necessary not only to bring out all that is known of human blood, but also that of the lower animals, stating all similarities as well as all differences.

As will be seen by the accompanying illustrations, the red blood-corpuscles of the fish-like animals known as lamprey eels are remarkably like those of man in general appearance. This has been known a long time,† and the fact is mentioned in most of the works on medical jurisprudence and in the longer papers on blood in its relation to legal medicine, but the bearing and possibilities of the fact are not adequately discussed, consequently there is left an element of uncertainty. As the writer's opportunities for studying the blood of these animals in adult and in larval forms have been exceptionably favorable, it has seemed worth while to place the facts before the medical profession so that fresh blood-stains or fresh blood from these animals may never enter as an element of uncertainty into the complex problems arising in legal medicine.

As the red blood-corpuscles of the *Camelidæ* form an exception in the great mammalian group in being oval instead of circular in outline, and, according to Gulliver,‡ in not forming distinct rouleaux, so the red corpuscles of the lamprey eels form an exception in the great non-mammalian group of vertebrates (birds, reptiles, amphibia, and fishes) in being biconcave and circular in outline, instead of being oval and biconvex, like those of all the rest of the great non-mammalian group. The corpuscles agree also with those of mammals in forming distinct rouleaux; this is especially marked in the brook lamprey and in the larva* (Fig., E F). The nucleus is present in all the corpuscles, but, as it is placed in the thickest part of the corpuscle (Fig., E), it does not show in perfectly fresh corpuscles except faintly in those of the embryo. The corpuscles when fresh appear, therefore, exactly like human corpuscles.

As these animals are often caught for food, and the larvæ are used for bait, fishermen are liable to have upon their clothing or instruments fresh blood or blood-stains,

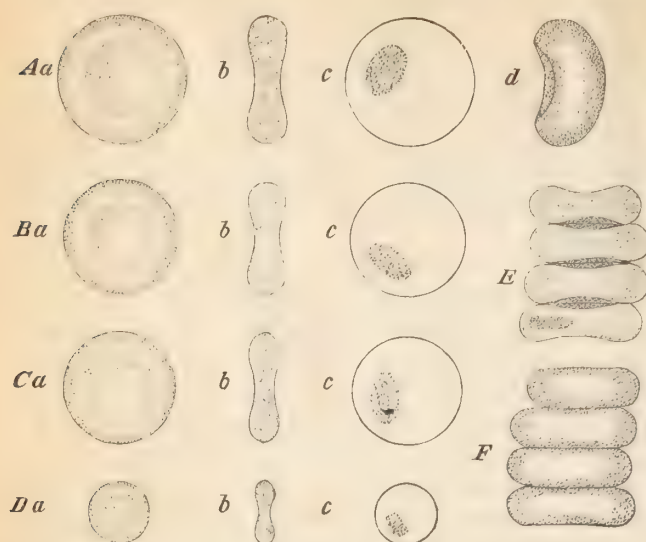
* Following Jordan and Gilbert ("Synopsis of the Fishes of North America," 1882), the adult lampreys are called sea lamprey (*Petromyzon marinus*) and brook lamprey (*Ammocetes branchialis*). The name *Ammocetes* was originally applied to the larval condition, supposing it to be a distinct animal and not merely a larva. All the specimens from which blood was taken were obtained in May and June in the streams flowing into the head of Cayuga Lake. The smallest larvæ (embryos 9 mm. long) were taken from the nest of the sea lamprey; the larger larvæ were dug out of a sand-bank along the stream. It is not known whether they are the young of the sea or of the brook lamprey.

† The circular outline of the red blood-corpuscles of the lamprey was discovered by R. Wagner. See his "Beitr. zur vergleichenden Physiologie," Bd. xi, 1838.

‡ See note cix in Hewson's works, edited by Gulliver, London, 1846.

* In a larva 73 mm. long the average diameter was 12.44 μ —that is, 0.96 μ smaller than in the larva of 142 mm. given in the table.

and if a crime were committed the question might arise whether or not the blood or the blood-stains were from a



Figures of the red blood-corpuscles of adult and larval lamprey eels, showing the appearance in different positions and the relative size in the different animals. Magnified 1,000 diameters. Outlined with Abbe's camera lucida. Drawn by Mrs. Gage.

A. Red blood-corpuscles of the sea lamprey (*Petromyzon marinus*). *a*, face view of a corpuscle; *b*, optical section of a corpuscle on edge; *c*, face view of a corpuscle showing the nucleus after the action of one-per-cent. acetic acid; *d*, cup-shaped corpuscle.

B. Red blood-corpuscles of the brook lamprey (*Ammocetes branchialis*). *a*, *b*, *c*, the same as in A.

C. Red blood-corpuscles of a larval lamprey 142 mm. long. *a*, *b*, *c*, as in A.

D. Red blood-corpuscles of a larval or embryo lamprey 9 mm. long. *a*, *b*, *c*, the same as in A.

E. Rouleaux of the corpuscles of the brook lamprey in optical section. In the lower corpuscle a nucleus is indicated to show that it is small and in the thickest part of the corpuscle. It is visible only after the hæmoglobin is partly or wholly removed from the corpuscle. In the embryo, where the corpuscles are so small, the nucleus is faintly visible in many corpuscles before the removal of the hæmoglobin.

F. Rouleaux of the 142 mm. larva focused on the upper surface. In both E and F the corpuscles are shown of different sizes. Compare the maximum and minimum diameters in the table of measurements.

human being. No difficulty should arise in deciding the question, for: (A) The presence of a nucleus may be readily demonstrated, as it is made apparent by drying, by acetic acid, and by the reagents most used in examining blood for medico-legal purposes.* (B) Except in the embryo 9 to 10 mm. long, which would never be used for bait, the corpuscles are nearly twice as large as those of man. (Compare the accompanying table of measurements.) Hence the blood-corpuscles of lamprey eels, in spite of their biconcave form and circular outline, really offer no more difficulty in medical jurisprudence than the corpuscles of any other of the non-mammalian vertebrates.†

* While it is true that the red corpuscles of mammalian embryos and the developing corpuscles in the adult are nucleated, the size and uniformly nucleated condition of the corpuscles of the lamprey would sufficiently characterize them.

† In 1887 wide circulation was given to a statement of Shipley ("Quart. Jour. of Micr. Sc.," N. S., vol. xxvii, 1886-'87) and Thompson ("Ann. and Mag. of Nat. Hist.," vol. xx, 1887, p. 231; "Anat. Anz.," Bd. ii, 1887, p. 631), that the red corpuscles of larval lampreys were oval in outline like the rest of the ovipara, and came to be circular only in the adult. This is certainly not the case with the larvæ from 9 mm. to 142 mm. long found in the streams flowing into the head of Cayuga

Table showing the Diameter and Thickness of the Red Blood-corpuscles of Lamprey Eels in the Adult and Larval Condition; also the Relative Number of Red and White Corpuscles, and the Number of Red Corpuscles in a Cubic Millimetre of Blood.

	DIAMETER.			Thick-ness.	Ratio of thickness to diameter.	Ratio of white to red corpuscles.	Number of red corpuscles in a cubic millimetre.
	Maxi-mum.	Mini-mum.	Aver-age.				
<i>Petromyzon marinus</i>	16·16μ	10·1 μ	14·2 μ	5·05μ	1 : 2·8	Male, 1 : 20 Female, 1 : 15	Male, 391,333 Female, 334,666
<i>Ammocetes branchialis</i>	15·15μ	10·1 μ	13 μ	5·02μ	1 : 2·59	1 : 95	500,000
Larval lamprey, 142 mm. long	15·65μ	12·12μ	13·4 μ	3·48μ	1 : 3·8	1 : 10	Not determined.
Embryo lamprey, 9 mm. long.....	8μ	7μ	7·448μ	1·96μ	1 : 3·8	1 : 10	Not determined.

NOTE.—The blood for measurement was taken from the heart or a pithing wound, and mounted without the addition of any liquid; the cover-glass was supported by a hair, and sealed with castor-oil. Only undistorted corpuscles were measured. The averages were obtained from twenty-five measurements in each case. All measurements were made with a 2 mm. apochromatic objective and C. ocular containing a Jackson ocular micrometer, the value of which was determined by using a Rogers standard stage micrometer.

DILATATION FOR STENOSIS AND FLEXIONS OF THE UTERUS, WITH NEW INSTRUMENTS.

By T. J. MCGILLICUDDY, M. D.,

SURGEON TO THE YORKVILLE DISPENSARY AND HOSPITAL FOR WOMEN AND CHILDREN, ETC.

IN chronic endometritis, obstructive dysmenorrhœa, and sterility, to remove the inflammation and the obstructions to menstruation and insemination, it is often necessary to dilate and straighten the uterine canal. The stenosis is very frequently at the internal os, and is caused by flexion of the neck on the body. This condition is the result of pelvic inflammation, subinvolution, or hypertrophy, which

Lake. In every specimen examined all the corpuscles not irregular in outline were circular. To make sure that this appearance was not due to reagents, the corpuscles were examined in the serum of the blood without the addition of any reagent whatsoever.

To avoid any error on account of the small quantity of blood in the 9 mm. embryos, the circulating blood was also examined. All the examinations were made with a 2 mm. apochromatic objective in combination with ocular $\times 12$.

So far as has been investigated, the blood-corpuscles of all vertebrates, mammals and non-mammals, are at first circular in outline and become oval only as a later stage of development. (See Milne-Edwards, "Leçons sur la phys. et l'anat. comp.," t. i, p. 48; Hewson's works, p. 233; Kölliker's "Grundriss der Entwickel.," p. 63.)

It is stated distinctly by Günther ("Study of Fishes," p. 150, also article "Ichthyology," "Encyc. Brit.," 9th ed., vol. xii, p. 658) that the corpuscles of lampreys are flat or *biconvex*. In Gegenbaur ("Comp. Anat.," Eng. ed., p. 576) it is stated that the red blood-corpuscles of birds, reptiles, amphibia, and fishes are *biconvex*, no exception being made for the lampreys. Parker, in his translation of Wiedersheim's "Comparative Anatomy of Vertebrates," says, p. 268: "In the case of the red corpuscles the nucleus persists, and the whole cell is *biconvex* in all vertebrates below mammals." The biconcave character of the corpuscles was pointed out by Kölliker in his histology (Busk and Huxley's translation, vol. ii, p. 336) and by others, and is one of the most easily demonstrated facts in histology.

forces down the uterus and the cervix against the posterior vaginal wall, thus deflecting the cervix while in a softened condition upward on the body, or flattening the end of it button-shaped. It deforms the external os, causing it to become a mere slit.

Schroeder* says: "Stenosis of the cervix may be congenital or acquired. The congenital form sometimes involves the whole cervical canal, and is very frequent at the external os, which is much contracted; seldom at the internal os. In the normal uterus (with the small cervix and the small external os of the undeveloped uterus we are not concerned at present) the vaginal portion is sometimes very long, hard, and gristly, and projects unusually pointed and conical into the vagina. On the point is the external os, so small as sometimes scarcely to be perceived, and in the speculum it is difficult to discover the small opening, and then often only by a drop of mucus protruding from it. Frequently the anterior lip projects and overlaps the posterior, so that the os is hidden as by a valve." These are conditions of defective development. In the majority of cases of stenosis the obstruction is at the internal os, and is the result of antelexion. On passing the sound in these cases it meets with an obstruction which is quite sensitive, due, probably, to inflammatory hyperæsthesia or irritability from flexion compression of the nerves at the angle. This obstruction may exist and there may still be no dysmenorrhœa. The internal os is occluded by inflammatory swelling before dysmenorrhœa manifests itself from this cause, although sterility is the common result.

Duncan† recommends in dysmenorrhœa spasmodica as very successful mechanical treatment by dilatation with bougies; the point he insists on is the stretching or distension of the internal os, using in some cases as high as No. 12 or 13, corresponding to male bougies, but with a different curve.

Sir James Simpson, of Edinburgh, maintained that stenosis of the internal os produced dysmenorrhœa and sterility, and devised a metrotome for cutting the constriction.

There is no doubt that flexions are a very great cause of sterility, not only by mechanical obstruction, but also by producing secondarily strongly alkaline uterine and cervical catarrhs, which destroy the viability of the spermatozoa.

Müller‡ states that "conception may be rendered difficult by a flexion of the uterus. This pathological condition in the majority of cases implicates the narrowed portion of the uterine body—viz., where normally the uterine walls are in

simple apposition they become firmly compressed, thus producing a stenosis of the uterine canal."

The sharper, more acute the angle of flexion, the more certain the sterility; and, if the cervical canal is plugged with thick, tenacious mucus, there is no doubt of its being an absolute cause of that condition. Flexions of the uterus cause many reflex symptoms—vertigo, headache, nausea, and vomiting, and very many other hystero-neuroses. These are only relieved by dilatation and proper intra-uterine and extra-uterine treatment. Flexions and endometritis are very often the exciting and direct cause of hystero-epilepsy—a fact which I have demonstrated by several cases in my own private practice.

A number of different forms of uterine dilators have been devised, but about all of them—like Sims's, Ellinger's, and Palmer's—diverge laterally, and dilate the cervical

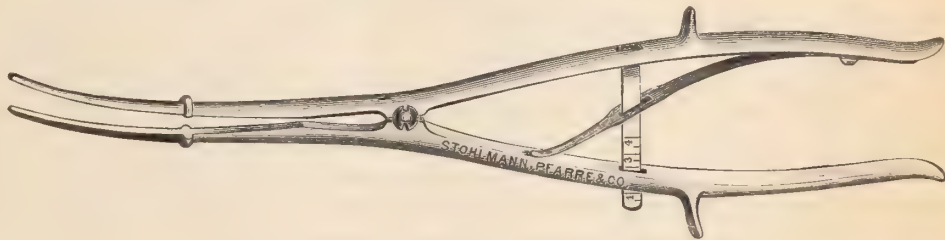


FIG. 1.

canal at the internal os in a direction where there is very frequently no constriction. The advantages of this form of instrument over the ordinary lateral dilators is best shown by an article by Dr. Graily Hewitt, in the "Annals of Gynecology" of this year, from which the two following cuts are taken. They represent a well-marked case of acute antelexion, and demonstrate of themselves the correctness of dilating the internal os and cervical canal in an antero-posterior direction. He says, referring to Fig. 2: "The uterine cervical canal is here hardly visible at the center and upper part of the cervix, owing to the closeness of apposition of the anterior and posterior walls, which closeness is due, as is manifest, to the presence of the flexion. In Fig. 3 is shown another photograph of the same uterus, but the cervical canal on one side (the right) is opened out by traction of two threads."



FIG. 2.

It is thus made evident that the cervical canal is not by any means destroyed. The interesting fact becomes evident that the canal is unusually widened from side to side at the same time that it is so narrowed from before backward that it is hardly visible when the canal is in its untouched flexed state. In this particular case the part of the uterine canal most affected by the flexion is just below the internal os. The bending of the uterus produces a curvature of the canal, which operates particularly on the canal for about three quarters of an inch. In this space the canal is excessively wide from side to side,

* Karl Schroeder, "Krankheiten der weiblichen Geschlechtsorgane," Berlin, 1881.

† J. Matthews Duncan, "Clinical Lectures on the Diseases of Women," 1882.

‡ P. Müller, "Cyclopædia of Obstetrics and Gynec.," vol. xi, p. 86 et seq., 1887, article "Sterility."

but excessively narrow from before backward, and it is manifest that the lateral widening, as well as the antero-posterior compression and narrowing, result from the shape of the uterus. The inference also follows that exaggeration of the degree of the bending of the uterus would have the effect of increasing the compression of the uterine canal. It is not easy, looking at this specimen, to avoid the conclusion that the escape of menstrual fluid and menstrual *débris*

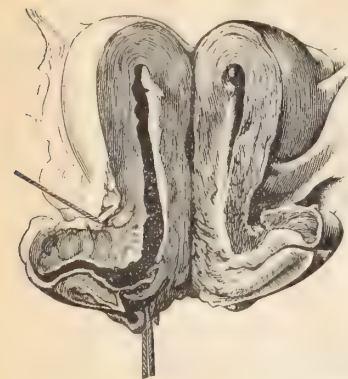


FIG. 3.

from the uterus must have been very difficult so long as the uterus remained flexed to its present degree."

The following drawings demonstrate the result of flexion in a simple rubber tube: Fig. 4 represents a side view, showing the compression in the direction of the arrows, while Fig. 5 is a front view, showing the lateral widening. The lateral dilators can not be made to dilate the cervical canal in its antero-posterior or conjugate diameter with any sort of satisfaction, and lateral flexions are extremely rare. The instrument devised has handles which are most con-

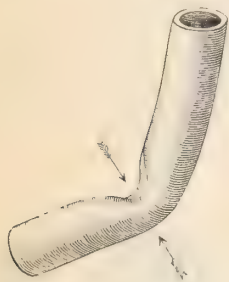


FIG. 4.

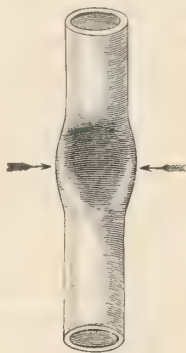


FIG. 5.

venient to manipulate with the registering guide, well out of the way of the fingers, and is graduated in inches and in centimetres, so that one can exactly determine the amount of dilatation and keep a record of it if desired. The intra-uterine portion of the blades is but two inches in length, as that is all that is necessary. The danger of injuring the fundus uteri is thus avoided. It gives the greatest dilatation at the internal os, where it is most needed. Of the lateral dilators, I think Sims's is the best.

As to what constitutes stenosis.

Peaslee* says: "In the *imparous* woman the narrowest point of the cervical canal—viz., the internal os—is, when opened by passage of the menstrual fluid, an ellipse whose conjugate and transverse diameters average, respectively, one sixth and one eighth of an inch, its area corresponding very nearly with that of a circle one seventh of an inch in diameter. The external os, also elliptical when moderately

dilated, has diameters averaging one fourth and one sixth of an inch. It thus has an area exactly twice that of the internal os, and equaling that of a circle one fifth of an inch in diameter. In the *parous* woman the size of the external os varies within quite extensive limits, since it is exposed to so many of the accidents of parturition, while the internal os is more nearly uniform." He finds, as a rule, the lowest average diameter in parous women who are neither sterile nor have dysmenorrhœa to be about one fifth of an inch, or a little less, at the inner os, presenting nearly twice the area of that of the *imparous* woman; the external os, as a rule, to be about one fourth of an inch in diameter. He believes that in the treatment of dysmenorrhœa and stenotic sterility these dimensions will be found sufficient in many cases:

Imparous.—The internal os equals a circle one seventh of an inch in diameter; the external os equals a circle one fifth of an inch in diameter.

Parous.—The internal os equals a circle one fifth of an inch in diameter; the external os equals a circle one fourth of an inch in diameter.

The performance of trachelotomy is now comparatively rare. There are many cases of conoidal cervix and ante flexion in which Sims's sagittal incision may be performed, but it is better to try the milder and safer method of dilatation first.

Coe* says: "That the incision of the cervix for stenosis is not an entirely harmless procedure is evident anatomically as well as clinically. The proximity of the peritonæum and the rich network of veins which lie in the muscular coat of the uterus renders the danger of peritonitis and septic absorption no imaginary one. The indications are clearly to make the incision as limited in length and depth as possible, and to practice rigid antisepsis." Bilateral incision is obsolete as an operation except in cases of conical cervix and pin-hole os, and then simply as preliminary to dilatation.

In the treatment of these cases we frequently find the uterus tender, with an almost imperforate cervical canal, swollen and occluded by tenacious mucus. It is necessary to have the uterus and annexa prepared for the operation of dilatation by the usual treatment for removing inflammatory conditions—i. e., hot-water injections, astringent and detergent applications, boroglyceride, boric acid, tampons, etc. (Boroglyceride, an excellent preparation, was first introduced into this country from England by the late celebrated J. Marion Sims, where it was first used by a Mr. Balfe for preserving game.) On the table or cabinet at the operator's side there should be, besides instruments, solutions of carbolic acid, bichloride, etc., a small porcelain, china, or glass dish containing cotton tampons soaked with boroglyceride and glycerin, and others dry. If they are not ready prepared, it causes considerable delay while the patient is on the table, which is unpleasant. After cleansing the cervix and vagina by mopping them with wet absorbent cotton, a double tenaculum is hooked into the anterior lip of the uterus, and it is drawn downward gently. With a hypodermic syringe, to which a silver intra-uterine pipe is attached,

* E. R. Peaslee, "Trans. of the N. Y. Acad. Med.," 1876, p. 428 *et seq.*

* H. C. Coe, "American System of Gynæcology," vol. i, p. 151.

about thirty minims of an eight-per-cent. solution of cocaine are injected into the uterine cavity, and the external os is plugged for a few moments with absorbent cotton. This gives great relief, particularly in acute and subacute endometritis with pelvic pain. After a few moments the dilator can be inserted and the canal dilated. In some cases it is necessary to pass conical cervical bougies before the dilator can be used. Of the usual forms, Peaslee's are inflexible, being of steel, and Hanks's are of hard rubber; two sets have been made of block-tin and of copper, which are flexible, and can be molded without trouble to the curves of the uterine canal. They are to precede the dilator when the canal is too small for its introduction. The block-tin sounds can also be used as obturators for inserting the tracheal cannula. Ordinarily, half an inch is as far as dilatation should be carried. The patient should be in the Sims position. The operation can be done in many cases at the physician's office, but the uteri of some women have a habit of getting up a severe inflammation on very slight provocation, so it is safer to do the operation at the patient's home, and then with all antiseptic precautions. The instruments are to be washed in hot soap-water to remove adherent mucus, then in clean water, dried, and passed through the flame of a spirit lamp, thus destroying all germs, which boiling water does not do. It does not discolor the instruments or "give them the blues," and they are finally placed in a one-to-ten carbolic-acid solution. In rare cases, when an incision is required at the internal os on account of the fibrous band or induration at the compressed angle of flexion, I have had a knife made with a metallic handle, flexible below the blade, yet strong enough to resist any ordinary pressure for cutting purposes. It is one eighth of an inch broad at the base and one sixteenth near the point, with a rounded point and back. A Sims or Emmet intra-uterine knife can be used, but they are much more expensive. After the blades of the dilator have been sterilized by passing through the spirit flame, they are well greased and introduced. The handles are pressed gently and slowly, until the guide shows that half an inch, or a little over a centimetre, separates the blades. After cleansing the uterine cavity with an antiseptic, the intra-uterine stem is inserted and allowed to remain, the patient drawing it away by the silk thread, if it causes any irritation. The stem has been modified by giving it a retaining swell which adapts itself to the normal shape of the cervical canal between the external and internal os, and prevents it from slipping out if the proper size has been used. The principle involved in the intra-uterine stem is the same as in Dr. O'Dwyer's tubes for stenosis of the larynx, from which the idea of the retaining swell and the perforation for the thread for its withdrawal was copied. The special forceps for introducing the stem holds it very firmly during its insertion. Messrs. Tiemann & Co. have put the instruments in a case which also contains a rather heavy, uterine probe to determine the direction of the canal. One is led to believe that the treatment of the foregoing conditions by dilatation is both rational and scientific. It is of course only applicable to chronic cases, and is a delicate procedure, requiring skill and good judgment.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 11, 1888.

WHAT KILLS THE CHILDREN.

IGNORANCE kills the children. Now and then accident lends a hand, as when some poor toddler tumbles into boiling water, or a weary, restless mother rolls upon her infant and stills its cries forever. But Ignorance does the business generally, blind giant that he is, always ready to seize the pillars of everything and turn bright places of joy as dark as buried Babylon. Tradition clutches the hapless infant the moment it is born, and decrees that it shall be immersed in water. The prenatal environment has a temperature of about a hundred degrees. This cold world boasts of any temperature it pleases. That of the bath is also a movable feast. Under the circumstances, the custom of washing the new-born is not unlike, in effect, the refinement of cruelty that would grasp a man from his bed and thrust him ruthlessly into a snow-bank. The fact that childbirth is an exhausting process, even to the baby, is too often ignored. Time is required for necessary reaction. The little one needs repose as well as its mother, a good rest at the start to insure some health and strength for its future guerrilla warfare with life. If it were let alone, sleep would generally follow its preliminary outcries. But no; custom says the little pilgrim must be scrubbed, and scrubbed he is. He survives—as a general thing. But "How did my lamb get that dreadful cold and those bad eyes?" and "How he cries with colic!" It is possible to manage better, as, for instance, in the Maternity Department of the Woman's Hospital in Philadelphia. There the eyes of new-born babies are washed with an antiseptic solution at the earliest opportunity. When the child is entirely born, it is left quiet on the mother's bed until the expulsion of all appendages, which usually occurs within an hour. The infant is then carried away just as it is, well wrapped up, and let alone. After the mother has received proper attention, the child is cared for. One loose garment and a diaper are all it is burdened with in the way of clothes. Warmly covered, it is laid away in a little bed by itself, and neither washed nor dressed until twenty-four hours have elapsed, when it is carried to the baby's bath-room (which is properly heated), and there its toilet is performed for the first time. The physician in charge states that since this plan has been adopted the babies thrive to a far greater degree and cry less. This method is at once rational and natural, and would seem to need no defense.

The maternal physique has some subtle, indefinable influence over young children, a health-giving power not at present well understood. The new baby is still in a certain sense a part of its mother, although a separate unit. Its well-being requires close contact with her during the greater part of the

twenty-four hours. A bed by itself is an injustice to helpless infancy. It is paterfamilias who should seek another resting place, not the new life as yet so frail and insecure. Only those who have tried this natural method can thoroughly appreciate its advantages and realize how admirably it insures the happiness of three persons. The child can be cared for during the night without exposure or any sudden chill. Always warmed and protected by a loving presence, the little one sleeps long and well. After the weaning period, the baby has his own bed as a matter of course. Until then, an undisputed half of the maternal couch is a necessity to the embryonic citizen, if he is to grow into that relative perfection of health and strength which nature has intended for him. The human mother is the only animal that puts away its young at night, probably because the right kind of reason has not yet taken the place of half-eradicated instinct. The hen gathers her brood under her wings; the mother-bear forms herself into a sort of animate woolly nest about her cubs, just as the cat's body embraces her kittens. Our cousins of the lower orders may not be such bad examples to follow, after all. At any rate, why not give those "wonderfu' weans" the benefit of the doubt?

The slaughter of the innocents goes on in different ways. Emotional prodigality is a most efficient means of removing the joys of a household. "Died of too much grandfather, grandmother, uncle, and aunt" would be a fitting epitaph for many a bright child. Emotion is the most exhausting of all mental attributes. What children do, and how much, is of far less importance than the way in which they do it. The evils of premature mental activity are without doubt very great; but to prematurely and unduly excite emotional manifestations is tenfold more hurtful. In this regard there seems to be the densest ignorance. The fact that young children's only business in life is to develop slowly—to eat, sleep, and play in childlike fashion—is too often forgotten in the home circle. On the contrary, they are supposed to attend to their own work of growing and developing and afford fun for the family at the same time. Our tender little ones are made the playthings of the household—hugged, kissed, talked to, and made to talk, for the pleasure and gratification of the parents and friends. Their callow brains are overworked by exciting and intense emotion. What wonder they have big heads, little bodies, and hardly any digestion at all! Feebleness, asymmetry, excitability, premature arrest of growth, are some of the evils resulting from this continual tension selfishly imposed by thoughtless grown folk upon unresisting childhood. To what extent the influences under consideration can reach is, perhaps, known only to those who are in actual contact with large numbers of children and who have made the subject of very young Americans something of a study.

There is a common practice in vogue—established in America more than in any other country and deserving of the severest criticism—which is at once a great impertinence and thoroughly reprehensible from a hygienic standpoint. When any person of either sex or of any condition chances upon a small child walking or running about, he (or she, generally she) con-

siders it his privilege to kiss that child if he happens to be pleased with its appearance. Even when not particularly pleased, from motives of courtesy, he feels well-nigh obliged to caress "the dear little thing," because such attention has come to be considered a sort of duty which grown persons owe to the rising generation. Entire strangers seem to think it imperative. Imagine how the children must suffer! Who can estimate the possible harm arising from running the gantlet of Tom, Dick, and Harry, or Jane, Sarah, and Mary, and Mesdames Brown, Jones, and Robinson? Ailments, slight in the adult, may be transmitted in this way, and become a source of much mischief among little people. Dr. A. Jacobi recently called attention to such dangers in connection with the diphtheritic and contagious form of follicular amygdalitis. "This mild variety," he remarks, "is that from which adults are apt to suffer. . . . With this variety, parents, while suffering from a slight sore throat, kiss their children." To break up a habit at once so cruel and so wanting in good taste as the promiscuous kissing of children requires iron-clad conduct and strength of purpose to bear with equanimity the displeasure of others. Let it be thoroughly understood by relatives and friends that young children are not to be kissed by them without special invitation by their parents. This will doubtless give offense, for many care more about their own personal pleasure than the present and future of the children in whom they take a passing interest. A mother who exacts right conditions of living for her child is bound to give offense, especially here in America, where the science of childhood is only just beginning to be understood. Let her bear it as best she may, consoling herself with the thought that an offended friend or relative is of infinitely less importance than the loss of a child or a child's health. It requires great force of character to bring up a family in the ways of health and beauty. As Mr. Lincoln said about being President, "If any one thinks it is easy, just let him try it."

THE MORRISTOWN LUNATIC ASYLUM.

ELSEWHERE in this issue we print the letter of resignation of the late medical director of the New Jersey State Asylum for the Insane at Morristown, otherwise known as the Morris Plains Asylum. Ordinarily, a letter of resignation is of little interest to the readers of a journal, but Dr. Booth's letter touches upon matters of importance connected with the management of the institution in question, and alleges a state of things of which the general public has learned something through the newspapers, and about the existence or non-existence of which the medical profession is very much concerned.

The root of the trouble seems to lie in the fact that there has been a growing lack of harmonious action by the medical department and the warden's department to secure the greatest amount of good capable of being done by the asylum to its inmates, and this is only the natural result of certain by-laws adopted by the board of managers three years ago. By a strict interpretation of those by-laws, the medical director has no authority to modify the general dietary; no authority to desig-

nate the style and quality of the patients' clothing in general or modifications of the same to meet special phases of disease; no authority to enforce the proper treatment of clothing in the laundry; no authority as to the color, quality, or texture of the bed-coverings, or in the furnishing of the wards, either in general or in regard to special appliances in particular cases; no voice in determining the character of the supplies bought for the institution, including drugs; and no authority to receive packages sent by patients' friends, and decide as to what articles shall be given to them and what shall be withheld. We do not know that he is positively prohibited from exercising these functions, all of which are unfit to be performed by any other person than the one who is charged with the patients' mental and bodily health, and we can not suppose that it was the original intention of the board of managers, of which so liberal-minded and straightforward a man as the late Dr. Varick was a member, to reduce their chief medical officer to the position of a mere registrar and a prescriber of drugs. However, under those regulations the medical department has found itself progressively encroached upon in matters essential to the patients' welfare, and we do not see how a medical director having the least heart in his work could conscientiously have continued longer to hold the position. It appears that Dr. Booth and his assistants have not allowed things to go by default, but have laid the evils of the system fully before the board at various times, but without the results that might reasonably have been expected.

It looks as if the managers had deliberately settled upon the policy of subjecting all the affairs of the asylum to the warden's control. In our opinion, if they are not hopelessly given over to a day-book-and-ledger plan of caring for the insane, they will find before long that they have made a mistake; if they fail to make this discovery, it is to be hoped that legislative interference will set them straight.

MINOR PARAGRAPHS.

THE NEW NATIONAL QUARANTINE LAW.

LAST week we briefly announced that the President had signed the quarantine bill passed by the Senate on the 3d of May, and by the House on the 23d of July. The text of the act will be found in this issue, in the article entitled "Government Health Reports." It will be seen that liberal appropriations are made for carrying out the purposes of the act, but the most satisfactory feature about it is that the management of the stations is placed in the hands of the officers of the Marine-Hospital Service.

A MISHAP TO AN AMATEUR DOCTOR.

THE newspapers record a somewhat amusing incident that lately happened to a person who tried to bring a man out of an epileptic paroxysm by pouring cold water into his mouth and upon his neck. After a slight struggle, according to the account, the epileptic sank back apparently dead, whereupon the manipulator of the water became intensely anxious and placed his ear at the mouth of the patient, who straightway caught the ear between his teeth and proceeded to chew it until "its beauty had vanished." An arrest on a charge of mayhem followed the epileptic's return to consciousness, but a police justice

discharged the prisoner, on the ground that he was not responsible for what he might have done while in a fit.

THE ILLINOIS STATE BOARD OF HEALTH.

THE report of the board's energetic secretary, Dr. John H. Rauch, presented at the last quarterly meeting, covers a wide range of subjects, but is so condensed as to occupy but a few pages of print. In the matter of the national quarantine service, Dr. Rauch mentions the regulations recently approved by the President of the United States for promulgation among our consuls; remarks that the Marine-Hospital Service has, through the Treasury Department, secured instructions to the Revenue Marine Service to co-operate in the prevention of the introduction of any foreign pestilence; and states that the maritime quarantine service is now better administered than at any previous time.

THE ADVANTAGES OF CLANDESTINE PRACTICE.

A WRITER in the "Union médicale" tells a curious tale of a man who was recently summoned before a magistrate in Paris, charged with practicing medicine illegally. To the magistrate's surprise, he showed that he was possessed of a diploma, and went on to explain that patients were attracted to him by the semblance of illegal practice, and protested that it would ruin him if his qualifications were made public.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 7, 1888:

DISEASES.	Week ending July 31.		Week ending Aug. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	31	11	34	12
Scarlet fever.....	111	14	81	18
Cerebro-spinal meningitis....	1	0	2	2
Measles.....	200	19	157	17
Diphtheria.....	94	38	106	28

Dr. Theobald Smith on the Disinfection of Dwellings.—

In Dr. Smith's article on this subject, published in our last issue, on page 119, second column, twelfth line from the bottom, the expression "from 4 to 5 per cent." should read *from .4 to .5 per cent.*

Experiments with the Alternating Electric Current.—

At the School of Mines of Columbia College experiments were recently undertaken, at the request of Mr. Harold P. Brown, electrical engineer, to determine the danger of alternating currents, by Dr. Cyrus Edson and Dr. Charles F. Roberts, of the New York Board of Health. The first experiment was performed upon a mongrel dog weighing 61 pounds, strong and in good condition. His height was 24 inches, his length from the tip of the nose to the base of the tail 42 inches, and the resistance from the right fore leg to the left hind leg 14,000 ohms. Connection was made by binding a piece of cotton-waste saturated with water round the leg with No. 20 bare copper wire. The dog was placed in the cage and the alternating current applied by Dr. Roberts at 272·16 volts for five seconds, the number of alternations being 288 in a second. The dog was silent and motionless during the continuance of the current. He gave a few spasmodic gasps 31 seconds after the current was first applied, and the heart ceased beating in 90 seconds after the current was applied. The dog was immediately dissected by Dr. Roberts and Dr. Peterson, and sections of the sciatic and pneumogastric nerves, the muscular fibers of the diaphragm, and the

lungs were placed under a microscope, and no changes in structure were observed. The second dog was a full-blooded Newfoundland, strong and in good condition, weighing 91 pounds, measuring from the tip of the nose to the base of the tail 48 inches, 25 inches high, and having a resistance of 8,000 ohms. The connection was made in the same manner as before. An alternating current was applied by Dr. Roberts at 340.5 volts electro-motive force for five seconds. The dog was silent and motionless during the continuance of the current, and howled and gasped for eight seconds after the circuit was opened, but, in the opinion of the physicians present, this was purely a mechanical action, as the dog was unconscious from the instant the current first reached him. The heart stopped beating in two minutes and fifty seconds after the current was first applied. The third dog was a half-breed setter and Newfoundland, weighing 53 pounds, 42 inches long from the tip of the nose to the base of the tail, and 24 inches high. His resistance was 30,000 ohms. The connections were made in the same way as before. Dr. Roberts applied the alternating current at 220 volts for five seconds; the result was not fatal in four minutes afterward. Mr. Porter, superintendent of machinery of Columbia College, then suggested that, as the dog was rigid and motionless during the continuance of the shock, it would be impossible for a man in the same conditions to utter a sound or to break the contact in five seconds. Dr. Edson then determined to administer the current at the same number of volts for 30 seconds on this account and because of the high resistance of this subject. This was done, and during the period of the 30 seconds the voltage rose to 234 volts. The dog died instantly, without sound or struggle. The resistance after death was found to be 2,800 ohms. All the physicians present expressed the opinion that a dog had a higher vitality than a man, and that, therefore, a current which killed a dog would be fatal to a man under the same conditions. It was their opinion that all these deaths were painless, as the nerves were probably destroyed in less time than that required to transmit the impression to the brain of the subject.

Dr. Edson had invited Mr. Elihu Thomson, of Boston, and Dr. Otto A. Moses to be present with measuring instruments to record the voltage, etc., but neither of those gentlemen was present.

This account was signed by Dr. Cyrus Edson, of the Board of Health; Dr. Charles F. Roberts, assistant professor of physiology, Bellevue Hospital Medical College; Dr. Frederick Peterson; Dr. Frank H. Ingram; Dr. H. A. Haubald; Dr. Schuyler S. Wheeler, electrician to the Board of Electrical Control; Mr. Harold P. Brown, electrical engineer; Mr. John Murray Mitchell; Professor C. E. Colby, Columbia College; Captain E. L. Zalinski, U. S. Army; and Professor L. H. Laudy, Columbia College.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 5 to August 11, 1888:*

KOERPER, EGON A., Major and Surgeon. Relieved from duty at Fort Keogh, Montana, and ordered to duty at Fort Walla Walla, Washington Territory. Par. 5, S. O. 175, A. G. O., July 30, 1888.

DE WITT, CALVIN, Major and Surgeon. Relieved from duty at Fort Sully, Dakota, and ordered to duty at Fort Missoula, Montana. Par. 5, S. O. 175, A. G. O., July 30, 1888.

CORSON, JOSEPH K., Assistant Surgeon. Leave of absence extended one month. Par. 17, S. O. 178, A. G. O., August 2, 1888.

HARVEY, PHILIP F., Captain and Assistant Surgeon. Relieved from duty as assistant to the attending surgeon at Washing-

ton, D. C., and ordered to duty at Fort Keogh, Montana. Par. 5, S. O. 175, A. G. O., July 30, 1888.

MERRILL, JAMES C., Assistant Surgeon. Granted one month's leave of absence from August 3d. Par. 7, S. O. 178, A. G. O., August 2, 1888.

GARDINER, JOHN DE B. W., Assistant Surgeon, will, on the expiration of his present sick leave of absence, report in person to the commanding officer at Fort Leavenworth, Kansas, for duty. Par. 4, S. O. 178, A. G. O., August 2, 1888.

GORGAS, WILLIAM C., Captain and Assistant Surgeon. Granted leave of absence for one month, to take effect on being relieved from duty at Fort Randall, Dakota. Par. 4, S. O. 177, A. G. O., August 1, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 4, 1888:*

HUDSON, A., Medical Inspector. Detached from the Trenton and ordered home.

WHITE, C. H., Surgeon. Ordered to the Trenton *via* Panama.

URIC, JOHN F., Assistant Surgeon. Ordered to the Receiving-ship Franklin.

BATES, N. L., Medical Inspector. Detached from the Richmond and ordered to the Pensacola.

ANDERSON, FRANK, Passed Assistant Surgeon. Detached from the Richmond and ordered to the Pensacola.

KITE, ISAAC W., Assistant Surgeon. Detached from the Richmond and ordered to the Pensacola.

JONES, W. H., Surgeon. Detached from the Pensacola and ordered to the Richmond.

STONE, E. P., Assistant Surgeon. Detached from the Pensacola and ordered to the Richmond.

McCORMICK, A. M. D., Assistant Surgeon. Ordered to special duty in the Bureau of Medicine and Surgery.

WIEBER, F. W. F., Assistant Surgeon, reports arrival home, having been detached from the Vandalia.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of June 12, 1888.

Dr. C. B. NANCREDE in the Chair.

A Contribution to the Study of Bone Repair was the title of a paper read by Dr. JOHN S. MILLER. The recent observations of Macewen, he said, had done much to stimulate the study of bone repair, and thrown not a little light upon the function of the medullary cells in osteogenesis. The resort to mechanical irritation of the medullary tissues as a means of accelerating bone repair was an old procedure. Nancrede had alleged priority in this for America. As far back as 1793, Eve had related, the lay surgeons of the frontier had been wont to make multiple perforation of the external table of the skull where necrosis had followed the Indian mutilation of scalping. And twenty years ago Agnew had resorted to the same procedure in a case of injury to the head. A fatal termination of the case, however, by encephalic complication, had rendered the experiment incomplete. Reports of success by this procedure had recently been multiplied to an extent that need not be repeated in detail.

That, furthermore, medullary proliferation was not only an element in osteogenesis, but was of itself sufficient to that end without periosteal co-operation, was shown by the case of

Macewen, in which a considerable restoration of the humerus had been secured "by bone-transplantation" after a suppurative inflammation had destroyed both the shaft and its periosteum. The date of this observation was 1878.

The patient was a boy two years of age. A suppurative periostitis of the right humerus of nine weeks' duration had resulted in total necrosis of the entire diaphysis, and this latter had been removed, leaving a tube of granulation material lining the periosteum. This tube had been kept patent by suitable dressing until the whole space had become filled with granulation tissue, and had finally become a mass of cicatricial tissue. No bone had grown from this periosteum, except in a small part next the proximal epiphyses, where at the outset the periosteum had been found covered with plaques of adherent osseous tissue. In the remainder there had been no osseous deposit, the result being a flail-like arm, which the patient found so useless that the parents desired its removal.

Macewen determined, however, upon another procedure. An incision was made into the upper third of the arm, exposing the head of the bone, to which was found attached a spike-like process of cartilage. This was removed, leaving as remains of the diaphysis a portion of bone an inch and three quarters in length. From this point a sulcus about two inches in length was made in a downward direction between the muscles. The former presence of bone was nowhere indicated, there was no vestige of periosteum, and the sole guide as to the correct place for transplanting was an anatomical one. Two wedges of bone with anterior curves were then removed from the tibia of a patient aged six years. The face of the osseous wedges consisted of the anterior portion of the tibia, along with its periosteum, the wedges gradually tapering toward the posterior portion of the tibia. After removal they were cut into minute fragments with the chisel, quite irrespective of the periosteum. The bulk of the fragments had no periosteum adhering to them, as they had been taken from the interior of the bone. They were then deposited in the muscular sulcus of the boy's arm, and the tissues drawn over them and carefully adjusted. The wound healed without suppuration. Two months after, a portion of bone an inch in length and three quarters of an inch in thickness was found firmly attached to the upper fragment of the humerus. Two other wedges of bone, larger in size, were similarly dealt with, and inserted two months subsequently to the first graft, and two more were placed in position five months after the first. These filled up the gap in the arm to the extent of four inches and a quarter. The arm then measured six inches in length.

Soon the utility of the arm was greatly restored. Seven years afterward he was seen and examined. The shaft of the humerus was found to have increased in length by an inch and three quarters, being now seven and three quarters; and it had increased in circumference to a marked extent, and assumed a somewhat irregular shape. The length of the sound arm had, however, considerably outstripped the length of the transplanted humerus. He could use the arm for many purposes, taking his food, adjusting his clothes, and many games.

Whether the introduction of proliferating medullary cells into ordinary connective-tissue granulations could convert the whole into osseous tissue, so that a few osteoblasts would, so to speak, leaven the whole mass, was a question involving grave doubt, but the affirmative would seem to receive some support from the case which Nancrede had related in 1883. An extensive laceration had caused denudation and necrosis of the ulna in two thirds of its extent and the process of repair had been delayed. He drilled numerous holes through the sequestrum into the medullary canal, and, to quote his own words, "in a few days granulations sprang up from the ulna and fused with

the granulations of the soft parts, and, in course of time, the fragment was separated."

That the procedure in this case had had the effect of stimulating osteogenesis from within could readily be believed; but concerning the fusion with granulation tissue without, a more accurate observation than had been recorded by Nancrede was desired, although by analogy we might conceive it possible, inasmuch as repair within the bone was by ossification of an embryonic tissue derived from the connective tissue around the blood-vessels of the medullary spaces. A similar case had been reported by Macewen, in which granulations appeared upon a surface of bone completely denuded of its periosteum, and gradually spread until they became united with the granulation tissue at the periphery of the wound. Macewen, however, inferred from this observation that the periosteum covering a bone might be completely destroyed or permanently removed, yet the denuded bone not only retain its vitality, but throw out cells which would cover it and form a new periosteum.

These cases seemed to confirm Macewen's dictum that the periosteum had no part whatever in the regeneration of bone. But the first case that the author would present demanded a different hypothesis for its explanation.

The patient, D. M., aged fourteen years, suffered from an osteomyelitis of the right tibia, resulting in total necrosis of its diaphysis. A complete involucrum had formed around the sequestrum and afforded an unsteady support to the body weight. It was covered with the thickened periosteum. A number of fragments had been removed from time to time, and the parents had refused to entertain for him the proposal of amputation. The case, however, when it came into the author's hands, had become from septic infection so desperate that he was compelled to do something radical at once.

Exposing the shaft, or rather the involucrum, through its whole length, he made with trephine and saw a fenestra large enough to permit the removal of the remaining sequestra, and cleared out the whole canal. Both epiphyses were found carious upon their exposed surfaces, and were scraped to the limit of safety. In a few days a superficial necrosis took place upon the inner surface of the tube.

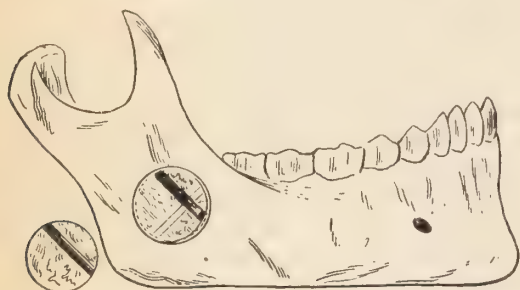
Demarcation was, however, promptly effected by the free use of aluminium acetate—that sheet-anchor in all sloughing wounds—and a layer of fine granulations became the field for any osteogenesis which might be hoped for. During the long process of repair with the carious epiphysis as a never-failing source of bacterial supply, it had been no trifling task to keep this extensive opening dry and sterilized. Furthermore, neither the patient, the household, nor the neighborhood could endure frequent dressings without great nervous prostration.

The requirements of the case were successfully met by a mixture of iodoform and starch, in proportions which varied with the changing conditions. The cavity of the wound was filled with this dry powder, and to the whole was applied a closed dressing of gutta-percha tissue. The purpose of the starch was to absorb the excess of moisture incident to a closed dressing as well as to dilute the iodoform. As soon as the powder became saturated it was removed by a stream of sterilized water, and the wound was filled and closed as before. The periods of dressing were gradually increased from three to ten days. In process of time the hollow of the involucrum became completely filled with granulation tissue, which continued to extend until it fused with the granulations from the soft parts, and finally the whole became covered with a new epithelium, which had gradually spread from the edges of the wound. The tissues now became denser, and offered more and more support to the body weight until, as could be seen, the patient had acquired a very useful limb, and could walk without discomfort.

We must therefore infer that a metamorphosis into bone had taken place, and, as the original diaphysis was gone with its medullary structure, no osteogenic agent in the result could be found other than the periosteum.

We must draw a similar conclusion from the recent case reported by Ceci: The patient, a young man, was seized with acute osteomyelitis of the left scapula five days after circumcision for inflamed phimosis. One month later Ceci extirpated the bone, making the usual L-flap. The periosteum was left intact as far as possible, and the arm was preserved. The patient recovered rapidly, and there was a subsequent regeneration of the bone. The only possible explanation of this result was by the hypothesis of periosteal agency or co-operation.

The second case presented by the author was in confirmation of Macewen's proposition that a portion of bone which had its continuity severed on all sides, and had had all its periosteum removed, was capable of living and growing. This is in contradiction to our inference in the case of the tibia, and the two could be reconciled only by the assumption that the discovered laws of osteogenesis were subject to some general law of which we were as yet ignorant.



Mrs. L., aged forty-seven years, had suffered with a neuralgia of the maxillaris inferior, for the relief of which all medical means had been exhausted in vain, which, therefore, left only the *dernier ressort* of neurectomy. The mode of operating was the usual one. The ramus was trephined near the angle of the jaw, the canal was exposed, and about two inches of the nerve trunk were drawn out and exsected. The button was, however, returned after having been sterilized in a 1-to-1,000 solution of corrosive sublimate, but it was not returned to its old position. With a view of imposing a barrier to the reproduction of the nerve, it was so rotated that the groove upon its lower surface stood at right angles to the axis of the canal. Not only did the wound close by first intention, but the button grew solidly in its position. Now, the curious thing in the case was that, before trephining, the author had carefully removed the periosteum, so that the latter could have taken no part in the subsequent bone repair. After seven months there had been no return of the disease.

Dr. JOHN B. ROBERTS said it was a curious fact that the medical mind had not appreciated the possibility of bone production, despite the frequent instances that must always have come under notice. He had been taught in cases of comminuted fracture to take out the spicules of bone that were entirely separated from the larger fragments, lest they should necrose and give rise to trouble. Now it was the practice of the best surgeons to leave the spicules, and it was found that often they did not die, and that they assisted in the process of union and solidification. This experience was in the same line as the facts given by Dr. Miller in connection with his interesting cases. If these spicules of bone could reunite, why not the button removed by trephining? Why was it not good practice to insert, when necessary, a portion of dog-bone or chicken-bone, as, indeed, had been done? We must not forget, however, the importance

of asepsis, and that it was antiseptic surgery that had made these procedures possible. In a case such as Dr. Miller had reported, where he rotated the button of bone, turning the groove in which the inferior dental nerve had run at right angles to its former direction, the speaker would be inclined to go still further, and turn it upside down. The bottom of the pit in which it was to be placed and the periosteal surface of the button being scraped, the ungrooved, freshened surface, formerly external, would then be placed inward, and a bony plug would be interposed between the divided ends of the nerve, probably preventing the reunion and return of pain which so often occurred.

The case of tibial resection had been very interesting to the speaker, as he had recently operated in a similar one, the patient being, however, a woman of about fifty years, so that he could not hope for so complete a closure of the cavity in the bone as in this growing child exhibited by Dr. Miller. In that case he had removed the whole front of the tibia, going as near the articular cartilages above and below as he dared. The process of repair was like that we saw in a tree. We knew that if a foreign body was inserted into a wound made in the trunk of a young tree, the process of cell growth would go on about it, and finally it would be completely covered in and its presence be unsuspected, until, perhaps, the saw struck it as the tree was being converted into lumber. Dr. Keen, in his recent case of trephining for brain tumor, had returned the button of the skull removed, and the patient was able in a few days to walk around with a perfectly healed and reunited cranium. Then we knew what the dentists did in the way of transplantation of teeth, or the return of teeth to their original sockets after the removal of diseased portions. More remarkable still was the implanting of old, dried teeth into new sockets bored in jaws from which even the alveolar process had disappeared, and their becoming fixed there.

Dr. GEORGE E. STUBBS said that perhaps in the numerous resections that had been done in army and in civil practice we had made mistakes. Surgery had advanced immensely since the war time, and antiseptic surgery had opened new possibilities. Often in his army practice all the bone was removed when there had been a comminution. He would now, with our new light, try to save more of the broken bone, and so shorten the period of recovery. In regard to the operative treatment of neuralgia, he believed that we were entering upon a stage of work that would be much enlarged in the near future. He had had a case recently in which neuralgia of the inferior dental nerve had existed for nearly seven years. He removed an inch and three quarters of bone with the dental engine, took out as much of the nerve as he had access to, and dressed and treated the wound antiseptically. The wound healed by first intention, and as yet there had been no return of pain; so that he considered that he had obtained a very good result.

The CHAIRMAN said that the first question to be answered in a discussion of this kind was, What constituted the periosteum? If we meant a fibrous membrane the inner layer of which consisted principally of yellow elastic tissue, we must agree with Macewen's extreme views, and admit that it had nothing to do with bone repair. But, if we studied the normal process of bone development, he, at least, must arrive at a different conclusion. The long bones were laid down in cartilage, a temporary structure. How did they ossify? By means of this very periosteum, which Macewen treated with such contempt, and which Ollier exalted too highly. There was a third layer of the periosteum in direct contact with the bone, and this layer was composed entirely of those elements which, wherever we saw them, we recognized as the agents of ossification—the osteoblasts. The temporary cartilage was invaded by

connective-tissue ingrowths from the periosteum, covered with osteoblasts, and was eaten up by them; and we found it permeated and finally replaced by a net-work of fibrous tissue covered with osteoblasts. A certain number always remained beneath the periosteum. A certain number, very small, remained in the Haversian canals, a still larger number in the medulla. It was clear to him why compact tissue died; it had so few osteogenetic cells. The medullary tissue lived because it was comparatively rich in osteogenetic elements. Why did bone die when the periosteum was stripped off? Because the resulting inflammation was so severe that the inflammatory tissue strangulated the osteoblasts in the Haversian canals. With antiseptic means we now controlled the inflammation, the osteoblasts were not killed, and the bone was saved. We were very hard nowadays on the periosteum. The fibrous layer had nothing to do with bone repair, but its osteoblastic layer was in direct communication through the lining of the Haversian canals with the medulla; it was practically one structure; and thus, if we looked at this matter from the standpoint of a correct histology, we found that both views were correct, provided only that we had a distinct understanding of what was meant by the word periosteum in each case.

As to Dr. Miller's cases, he could not quite agree with him as to what formed the bone in the case of total excision of the diaphysis of the tibia. While the shaft was dying, new bone was formed by the deep layer of periosteum, but after that the medullary spaces of the involucrum completed the bone. He would also take exception to Dr. Roberts's proposition to scrape the button of bone and turn it inside out in the case of trephining the jaw for neuralgia. By this process he would remove all the osteoblastic cells, and the compact tissue would have a very good chance of dying. One reason for failures in operations about the lower jaw was that it contained so little true medullary tissue, while, on the contrary, we could replace trephine buttons in the skull and have union, because the skull contained a large amount of such tissue.

He thought Dr. Stubbs need not blame himself for his practice in resecting in military surgery. The necessary condition to bone repair was that absence of suppuration afforded by antiseptic methods, and, under the conditions present in the operations he had spoken of, he had done right. And to-day he did right in trying to save the bone. In each case he took the proper course in relation to the circumstances, and that was all any one could do.

The case of Dr. Agnew, referred to in the paper, had occurred some twenty odd years ago. The speaker had seen the operation. The wound was completely covered by granulations. The fact that a denuded external table did not always necrose had been known to Pott, and to all the older as well as modern surgeons, and, if Ollier had not led us astray by grafting, by insisting upon the periosteum being the sole osteogenetic agent, ignoring the fact that in removing it a layer of cells identical with those of the medulla was torn off, he thought we should have arrived at a correct practice sooner. But surgeons had gone wrong by authority of Ollier, as they were now going wrong in the other direction by authority of Macewen.

In regard to the implantation of dead teeth, which Dr. Roberts had referred to, the principle was probably the same as in the bony pegs formerly employed for ununited fractures. They were hollowed out by the granulation tissue which developed into a fibrous or even osseous tissue, and so held the tooth in place by these newly formed digitations.

About twelve years before, the speaker had exhibited to the society a case in which he had resected four inches and a half of the humerus, and about two inches and a half were reproduced from the sawn end. This was without antiseptics. In the

case referred to by Dr. Miller, where he had drilled the ulna, he was sure that the bone granulations had fused with those of the soft parts, for these reasons: The shell of bone when detached was not more than one fourth the thickness drilled through, while the new bone was nearly as thick as the ulna of the other side, as the cicatrix was not materially depressed. A recent experience in a case of knee-joint excision induced him to recommend that, instead of wiring fragments of bone, we nail them together, after having previously drilled, or not, according to circumstances, allowing the heads of the nails to project through the skin. We thus saved trouble, and avoided damage in the removal.

Dr. ROBERTS said that the chairman had misunderstood him in regard to scraping away the cancellated tissue in reversing the plug in the case of trephining the lower jaw. He would scrape only what the chairman called the fibrous periosteum from the button, and from the bottom of the pit in the jaw he would take away the cancellated structure sufficiently to remove all trace of the nerve canal. The two raw surfaces would be placed together, and, by sinking of the button, would be a solid bony plug interposed between the nerve ends.

Dr. MILLER saw no advantage in reversing the plug over rotating it. The groove being at right angles to the course of the nerve, the part in contact with the nerve was still solid bone, and the groove did not matter at all. In relation to the tibia case, the reason he emphasized the fact that the repair took place from the periosteum was that there was entire death of the old bone with the involucrum, and the periosteum did not die.

Book Notices.

A Practical Treatise on Materia Medica and Therapeutics. By ROBERTS BARTHOLOW, M. A., M. D., LL. D., Professor of Materia Medica, General Therapeutics, and Hygiene in the Jefferson Medical College of Philadelphia, etc. Sixth Edition, revised and enlarged. New York: D. Appleton & Co., 1887. Pp. xxiv-802. [Price, \$5.]

Dr. BARTHOLOW's style of writing is so concise and pointed that it has hardly been possible for him to abridge the matter contained in previous editions of this work to any considerable extent for the sake of accommodating new material; but that same faculty for condensed expression has enabled him to give adequate consideration to a number of new remedies and new applications of old ones without adding quite a hundred pages to the book as it stood before. The additions are interstitial, so to speak, each new drug being classed under the appropriate heading among those before made use of, according to its physiological relations. The judiciousness of a writer on pharmacology may readily be judged by the way in which he speaks of new drugs, and in this light, as in so many others, Dr. Bartholow's treatise shows abundant evidence of the sterling worth that, being recognized by the profession, has made it such a favorite. Much of the labor that has fallen to him in preparing this edition must have consisted in weighing testimony as to the value of new drugs, and throwing out a good share of it as worthless. Shallow writers are continually bringing forward this or that plant or chemical compound as a drug possessed of notable powers. If it were reasonable to expect that anything would wean them from their evil ways, we would commend to them this sentence from Dr. Bartholow's preface: "The earliest announcements are not unfrequently given forth by medical quidnuncs, who are more enthusiastic than logical, more sensa-

tional than exact, and more concerned to advertise their own doings than to give expression to faithful observations."

The Practice of Medicine and Surgery applied to the Diseases and Accidents incident to Women. By W. H. BYFORD, A. M., M. D., Professor of Gynæcology in Rush Medical College, and of Obstetrics in the Woman's Medical College; Surgeon to the Woman's Hospital of Chicago, etc., and HENRY F. BYFORD, M. D., Surgeon to the Woman's Hospital of Chicago; Gynæcologist to St. Luke's Hospital, etc. Fourth Edition, revised, re-written, and very much enlarged, with Three Hundred and Six Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xxiii-17 to 820 inclusive.

THE preceding editions of Dr. Byford's work have been held in high esteem by the profession, and it seems to us that its value is greatly enhanced by the revision shown in the fourth edition, a great part of which, as we learn from the preface, has been done by the younger author. As the book now stands, it has two features that, in our opinion, make it invaluable to the learner: the minuteness with which it teaches the technics of physical diagnosis and the careful distinction that it makes between different sorts of cases that are ordinarily described only from the standard examples—the description being conventionalized, as it were. We know of no more useful book for the student of gynæcology.

BOOKS AND PAMPHLETS RECEIVED.

The Abortive Treatment of Specific Febrile Disorders by the Biniodide of Mercury. By C. R. Illingworth, M. D. (Ed.), M. R. C. S. London: H. K. Lewis, 1888. Pp. 24.

La lepra es contagiosa. Por el Dr. R. Enrique Robelin. [Publicado en Cronica Medica-Quirurgica de la Habana.]

University of Kansas City, Medical Department, Eighth Annual Announcement, Session of 1888-'89.

The Medical and Surgical History of the War of the Rebellion. Part III, Volume I. Medical History. Being the Third Medical Volume. Prepared under the direction of the Surgeon-General, United States Army. By Charles Smart, Major and Surgeon, United States Army. Washington: Government Printing Office, 1888. Pp. xiii-989.

Reports for the Years 1886-'87, and 1887-'88. Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

The Extra Pharmacopœia with the Additions introduced into the British Pharmacopœia, 1885. By William Martindale, F. C. S., late Examiner of the Pharmaceutical Society, etc. Medical References and a Therapeutic Index of Diseases and Symptoms. By W. Wynn Westcott, M. B. Lond. Fifth Edition. London: H. K. Lewis, 1888. Pp. 462.

Hygiene for Base-Ball Players; being a Brief Consideration of the Body as a Mechanism; the Art and Science of Curve Pitching; a Discussion of the Causes and Treatment of the Disabilities of Players; with a Few Practical Hints to Club Managers. By A. H. P. Leuf, M. D., of Philadelphia, etc. Philadelphia: A. G. Reach & Co., 1888. Pp. 13 to 135.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

The Pathogenesis of Glaucoma.—Stilling ("Arch. of Ophth.," xvi, 4), as the result of his experiments, decides that from the young eye to the senile, and from the senile to the glaucomatous eye, there is a continuous decrease of the filtrating power. The pathological change which is here described has not hitherto been mentioned. In glau-

comatous eyes a peculiar separation of the lamellæ of the optic nerve may be noticed, principally in the outer lamellæ which blend with the zone of the sclera surrounding the optic nerve. These changes Stilling found constantly, more or less pronounced, in glaucomatous eyes. They were most marked in absolute glaucoma. Stilling concludes: 1. That there is no open anatomical communication capable of demonstration between the anterior and posterior portions of the globe. 2. Diffusible fluids may, under pathologically altered conditions, penetrate into the anterior chamber from the vitreous through the space between the retina and chorioid. 3. The escape of the lymph of the vitreous takes place in all probability through the optic nerve and its sheath. Fluids may also pass directly into Tenon's capsule by means of filtration or diffusion through that part of the sclera bordering on the optic nerve. 4. The older the eye the smaller the scleral zone, and the less the power of filtration. This is most marked in glaucomatous eyes. A glaucomatous eye is a highly senile or sclerosed eye, showing an increase of pressure, which in the young eye is compensated for by filtration through the zone of the sclera surrounding the optic nerve, as well as through the interspaces of the dural sheath which are in communication with the scleral zone. This view of the glaucomatous process combines the two most important theories of the present time, inasmuch as it is regarded as a hypersecretion within physiological limits in eyes with impeded channels of filtration. In hæmorrhagic glaucoma the normal channels of filtration are not only narrowed by senile change, but atheroma of the retinal vessels is also present. The course and symptoms of the different forms of glaucoma have for their *raison d'être* the possibility of a compensation of the existing hypersecretion and increase of tension. One of the conditions necessary for the carrying out of this compensation is found in the thickness of the sclera; where it is very thick, it is an obstruction to compensation. This may have something to do with the predisposition of hypermetropic eyes to glaucoma and the relative immunity of the myopic eye. In myopic eyes there is a splitting of the sheath of the optic nerve, which is in some cases prolonged a considerable distance into that part of the sclera surrounding the optic nerve, a circumstance which renders filtration considerably easier.

The Return to the Flap Operation for Cataract.—Schweigger (*ibid.*), in a paper on the modern operation for cataract, states that, owing to irregularities in the wound made by the narrow knife and for other reasons, he has given up the use of the small knife for cataract operations, and about a year ago he began using a knife which was 5 mm. broad at a distance of 30 mm. from the point. He soon, however, recognized the advantage of the old-fashioned cataract knife, and increased the width of the blade to 7 mm. Since then he has done all extractions of senile cataracts with the triangular knife, with a flap about 4 mm. high, gradually omitting iridectomy. The transition to the old method was gradual. It has seemed to Schweigger that the dangers of prolapsed iris have been exaggerated. It is desirable to have a clean cut, not too peripheral, but in the transparent cornea, on the anterior edge of the tinnitis. With the escape of the lens there is almost always some prolapse of the iris, but it can readily be stroked back with the curette. Should, however, the iris be pushed into the wound by the pressure of the vitreous body, it is much better to do an iridectomy at once. In sixty-two cases without iridectomy, prolapse of the vitreous happened but twice. Eserine should be dropped in the eye directly after the operation, and perhaps at the first change of the bandage. If used too long it favors iritis. For the first three days both eyes should be closed by a binocular bandage, and any opening of the lids should be avoided. A contracted pupil is desirable for the first two days; after this mydriatics are necessary, as more than 50 per cent. of all cases heal with posterior synechiæ. Absolute rest upon the back is not necessary; the patient may slowly change his position. After the first three days there is no danger of prolapse of the iris unless some unforeseen accident should take place. If it does occur, its excision is not advisable unless it occupies the greater part of the wound, and even then not until two weeks after the operation. Where it is small, it is often flattened down by cicatrization, at the same time improving the irregular curvature of the cornea. The opening of the capsule is always done with the forceps, which passes easily beyond the iris, and under all circumstances the re-

removal of a piece of the capsule is a great advantage. Portions of the cortex remaining are to be scooped out with the small spoon.

Total Blindness from a Cortical Lesion with Softening of the Internal Surface of the Occipital Lobes.—Bouvet ("Rev. gén. d'ophthal.," Nov. 30, 1887) reports an interesting case occurring in a man, aged seventy-two, who was suddenly attacked, while apparently in health, with trembling in the limbs and incoherent speech. He was taken to a hospital and remained immovable on his back. His intelligence was clouded, but he was not unconscious, and had no verbal deafness. His look was fixed and vague. Both pupils were sluggish, and the eyes were turned upward. Vision was absolutely abolished. There was no hesitation in the articulation of words, but his answers to questions were very slow. There was no motor aphasia. The faculty of memory was profoundly affected. There was no appreciable defect either of motility or of cutaneous sensibility. There was no deviation of the face and no paralysis of any cranial nerve. There was incontinence of urine and feces. The media were normal and there was no ophthalmoscopic evidence of disease. From October 12th to October 20th he remained in the same unchanged condition. A bed-sore over the sacrum then made its appearance and he became feverish. The next day it became necessary to tie him in bed. Three days later he became slightly hemiplegic on the left side and he became comatose and died on October 29th. At the autopsy both posterior cerebral arteries were found dilated and atheromatous. On being opened, they were found entirely obliterated by grayish plugs. On the left side the thrombus extended from the primary bifurcation of the artery to some distance into the branches distributed to the infero-internal surface of the brain. On the right side the thrombus began near the bifurcation of the basilar artery and extended for a considerable distance into the terminal and collateral branches. There were two spots of softening of unequal size on the infero-internal surface of both occipital lobes. On the left side the degenerated portion occupied the angle, nearly two thirds of the second temporo-occipital convolution, and the posterior half of the first temporo-occipital convolution. The softening extended through the cortex into the white matter as far as the wall of the occipital horn of the lateral ventricle. Immediately beneath the perpendicular cleft the softening extended slightly on the external surface of the occipital lobe. On the right side the softening was in the same region but more extensive. It occupied the angle, the posterior two thirds of the second and first temporo-occipital convolutions, and extended over the external surface of the occipital lobe.

Purulent Conjunctivitis of the Newly Born.—Korn ("Arch. f. Gynäkologie"; "Amer. Jour. of Ophth.," Nov., 1887) is of the opinion, from his own observations, that the infection of the eyes of babies probably does not take place while they pass through the vagina, but later, and is artificial, and due to unsatisfactory cleansing. In fact, the eyes of the babe are sufficiently protected to make the entrance of mucus into the conjunctival sac almost impossible. Only a face presentation might favor this accident. Hence he thinks it possible to dispense with the nitrate of silver in these cases. The baby is to be carefully washed with water, without paying any attention to a previous cleansing of the parturient mother. The results were equally good with this method, as soon as the nurse became accustomed to scrupulous compliance with the orders. Out of one thousand babies treated in this manner, only 0.4 per cent. were affected during the first four days of life by purulent ophthalmia. In summing up the results of his experiments, he formulates the following propositions: 1. Credé's method of preventing purulent ophthalmia is absolutely certain and trustworthy when applied in the proper manner. 2. The active part in Credé's method is the nitrate of silver, which is a specific against the gonococcus. 3. The infection of the baby's eye with the poison does not take place in the vagina, but always after birth. 4. The most scrupulous cleanliness during birth and the puerperal state is sufficient to reduce the affections of the eyes to a minimum, and most probably can prevent them altogether. 5. The method is very simple and can be learned by any nurse.

Independent Idiopathic Inflammation of the Optic Nerve.—Hirschberg ("Ctrbl. f. prakt. Aug.," Nov., 1887) reports a case of this kind occurring in a boy, aged fifteen, who complained of a recent and sudden loss of vision in the right eye. This eye had squinted inward for

a long period, and the patient was highly hypermetropic. In the right eye, vision was reduced to counting fingers at one foot. The field of vision showed a large central scotoma. The pupil contracted only by reflex irritation from the other eye. The right eye was painful on pressure, and the optic disc was clouded and obscure in outline. The course of the disease showed three stages. The first and shortest was marked by pronounced visual disturbance and almost negative ophthalmoscopic evidence. The second, longer stage was marked by an improvement in visual power, but with distinct optic neuritis. The third, more lasting stage, was distinguished by almost complete restoration of vision and disappearance of most of the inflammatory symptoms. One point of great importance for the diagnosis is the loss of direct pupillary reaction in a case marked by great disturbance of vision without ophthalmoscopic evidence of disease. When an eye is attacked by a marked central scotoma in the visual field and then becomes rapidly and totally blind, we may conclude that the disease has first attacked the sheath of the optic nerve, and afterward the nerve itself.

An Instance of Marked Heredity in a Form of Cataract developed in Early Life.—Berry ("Oph. Rev.," January, 1888) gives a very interesting account of a very marked family tendency to the development of cataract in early life, running through seven generations. Out of 55 individuals belonging to five generations whose existence could be traced, 28 of whom were males and 27 females, 20 had cataract, 8 males and 12 females, a percentage of 44.4 of the females and of about 28.6 of the males. There were five instances in which transmission took place through the females, and always in the case of a female who herself had cataract. In one case transmission took place through a male who was himself the subject of cataract. In another case this was highly probable, although he had no cataract, but his ancestors had. The transmission was shown to be much more strongly marked through the female than through the male, and in this respect this hereditary history differs from most which have been published in connection with cataract. This may possibly be on account of the different nature of the cataract, which always developed in early life. In true congenital cataract Berry has never found any evidence of heredity. No other disease besides cataract appears to have been transmitted at the same time. A point of general interest in connection with heredity in these cases is the tendency in every instance for the cataract cases to appear in succession, apparently showing a greater tendency to inheritance from the mother at one particular time of child-bearing life than at others. In the third and fifth generations the cataract cases all came first, and were followed by a number free from this defect, while in the fourth and sixth generations the tendency asserted itself after children with healthy eyes had been born. In no instance did the eldest girl escape.

The Treatment of Serious Forms of Granular Conjunctivitis.—Abadie ("Ann. d'oc.," Nov.-Dec., 1887) recognizes two factors in the pathogeny of severe granular conjunctivitis: 1, The presence of the microbe; and 2, the state of the tissue in and on which it develops. The accessory factors are: The state of the adjacent parts, lacrymal passages, palpebral fissure, and the reaction of the general nervous system of the individual. For some time past he has in rebellious cases combined systematically daily scarifications of the conjunctiva with cauterization. If there is great local irritation and marked nervous reaction, he begins by applying leeches to the temple. Then he instills a solution of cocaine, and, after anæsthesia has been produced, he makes slight scarifications in the conjunctiva with Desmorres's instrument, beginning usually with the superior *cul-de-sac*. The parts are allowed to bleed freely, and are subsequently cauterized with the glycerole of copper. This treatment is repeated daily, and gradually the conjunctiva becomes thinner, less red, more elastic, the pannus gradually disappears, and the infiltration of the underlying and neighboring tissues slowly recedes.

Ocular Phenomena in Sclerosis "en Plaques" and in Ataxy.—Charcot ("Rec. d'ophthal.," November, 1887) thinks that a comparison made between the ocular troubles of sclerosis "en plaques" and those of locomotor ataxia is very instructive. In ataxy, one of the commonest symptoms is diplopia, which lasts two or three months, and is caused by paralysis of the third or sixth nerves. The same symptom may occur in sclerosis "en plaques" when the lesions occur in the

nerve-trunks themselves. But it is a rare phenomenon here. But we meet in sclerosis "en plaques" with paralyses of ocular muscles, the origin of which must be sought in the nuclei, and these do not occur in ataxy. These are not peripheral lesions as in tabes, but are distinguished by a defect of co-ordination in the necessary movements of the eyes, or, in other words, paralysis of associated movements. These patients never are able to fix any object, and the movements of the eyes are often oscillatory and resemble nystagmus. At first these patients see double, but soon learn to suppress the second image. Finally nystagmus supervenes, which is a specific symptom. In tabes we often meet with pronounced myosis, but along with this symptom there is a condition known as the Argyll-Robertson pupil. This symptom consists of two elements: first, the mydriasis or myosis is not influenced by light; secondly, this pupil, insensible to light, contracts when the eyes converge for near vision even in extreme myosis. The contrast between the effect of light and that of the accommodation constitutes the symptom known as the Argyll-Robertson pupil. In sclerosis "en plaques" this symptom does not exist. If myosis is present, a slight contraction is produced by exposure to light, and in the dark the pupil dilates. In tabes the blindness is final and permanent and due to an atrophy of the optic nerve characterized by a brilliant white aspect of the disc, with sharply defined outlines. This atrophy of the optic nerve is often the first symptom of tabes. In sclerosis "en plaques" blindness may be present, but the only ophthalmoscopic evidence is a simple discoloration of the papilla. Moreover, the blindness is transient, lasting five or six months and then disappearing. This re-establishment of the vision is explained by the fact that in sclerosis "en plaques" the axis-cylinder persists, and consequently the functions of the nerve may be re-established. In tabes there is a narrowing of the visual field, which is irregular owing to the existence of scotomata, and it is not concentrically limited as in hysteria. There is also achromatopsia partialis, the faculty for recognizing blue and yellow being long preserved. These phenomena have no analogues in sclerosis "en plaques," except that in the latter there sometimes occurs a narrowing of the visual field resembling that in hysteria.

Ocular Cephalalgia.—Parinaud (*ibid.*) divides this form of cephalalgia into ocular and neuro-ocular. Under the first head the asthenopia complained of is accommodative or muscular. In accommodative asthenopia the insufficiency of the ciliary muscle may be due to age, the hardening of the lens rendering it less amenable to the contraction of the ciliary muscle. Another cause is hypermetropia or astigmatism, which imposes upon the muscle of accommodation permanent or abnormal contraction. In muscular asthenopia the insufficiency of the muscles may be due to congenital weakness, a peculiar shape to the skull, exophthalmia, etc. Muscular asthenopia, like accommodative asthenopia, is marked by the difficulty of continuous application of the eyes and by the cephalalgia caused by this application. In accommodative asthenopia the letters are obscured; in muscular asthenopia they move about, become doubled, and seem to glide over each other. The cephalalgia is preceded by a sense of fatigue at the internal canthi. Sometimes the patients complain of a sense of tension or of pressure at the apex of the orbit, accompanied by vertigo and nausea. The insufficiency of the internal recti existing in myopes may be overcome by giving concave glasses for reading, or by the use of prisms of 3° to 5° , with the base inward; and if the insufficiency is of a high degree, by tenotomy of one or both external recti. In neuro-ocular cephalalgia the cause is found in a general indisposition, such as hysteria or neurasthenia. Another form is that met with in young persons, from fifteen to eighteen years of age, in whom the pain is mainly frontal, and is always exaggerated by use of the eyes. It resembles the headache met with in hypermetropes.

General Apoplexy of the Vitreous in Young Persons.—Zieminski ("Rec. d'ophthal.," December, 1887, and January, 1888) considers that profuse, non-traumatic hæmorrhage into the vitreous occurs, as a rule, at two principal epochs of life—during youth and old age. In adults with vitreous hæmorrhage there are most always found the signs of a gouty constitution; the walls of the blood-vessels have undergone degeneration as a result of arterio-sclerosis. Among adults with this affection, however, there are often women who show no signs of the arthritic diathesis. The intra-ocular hæmorrhages in such women occur usually

at the menstrual epoch. The vitreous hæmorrhages which are the subject of these observations, however, occur in the young, and ordinarily attack but one eye, though the other eye may be subsequently affected. At first there is usually no pain, but there may be a few sharp twinges. The patient at the same time perceives a distinct luminous phenomenon, caused by the sudden compression of the fibers of the optic nerve. This is especially the case where the hæmorrhage is close to the disc, and has come from the vessels of the disc or of the sheath of the nerve. The vision may be lost suddenly, or it may diminish gradually during several days before it is entirely lost, or even very decidedly affected. Central vision is most affected, though peripheral vision may also be abolished. There is no external sign of any lesion, and the intra-ocular tension is at first not at all affected. If the hæmorrhage is near the posterior pole, the blood has come from a ruptured vessel in the retina, or on the disc, or from the sheath of the nerve. If the extravasated blood is found mainly at the periphery, it has come from a ruptured choroidal or ciliary vessel. Still, it is by no means easy to locate the source of the hæmorrhage, for the absorption of blood extravasated in the vitreous goes on the more slowly the farther it is from the ciliary body. If, after the blood has been absorbed, the field of vision be carefully examined, a small scotoma will usually be found to indicate the seat of the lesion in the choroid or retina. Observations with the sphygmograph do not teach us much, for it is well known that a capillary hæmorrhage may occur not only when the arterial pressure is increased, but also when it is lowered. There is, as a rule, in these cases no valvular disease of the heart, but there is an essential hypertrophy of the heart, due probably to an exaggerated development of the heart in proportion to the other organs. The hæmorrhage may be the result of an abnormal condition of the digestive canal or of the sexual apparatus. Zieminski thinks that, under certain circumstances, they may even occur from a cerebral congestion due to a faulty attitude in reading or writing. As regards treatment, the patient should avoid all muscular exertion of every kind and all moral or emotional excitement, and should abstain from alcoholic drinks. The digestive apparatus should be kept in perfect order. If there is hypertrophy of the heart, give potassium bromide and convallaria. All use of the eyes should be absolutely forbidden. A light bandage may perhaps facilitate the absorption of the blood.

A Needed Reform in Visual Records.—Wilson ("Amer. Jour. of Ophth.," Dec., 1887) advocates a reform in recording the results of the examination of vision. For clinical purposes, he thinks it a safe assumption that visual acuity may be measured by the ratios between the heights of the smallest letters distinguished at a given distance from the eye, and that these ratios may be expressed in terms of the series 1, 0.9, 0.8, 0.7, etc., 0.09, 0.08, etc., the intervals of which can be made to serve all necessary accuracy. Thus, instead of writing $V = \frac{20}{100}, \frac{20}{120}, \frac{20}{140}, \frac{20}{160}, \frac{20}{180}, \frac{20}{200}$, etc., we may write $V = 1, 0.5, 0.2, 0.9, 0.05$, etc. If a equals the height of the five-minute letter for twenty feet, y that of any other letter, and v the expression for visual acuity, then $y = \frac{a}{v}$ ex-

presses their relation, and since the height of the letters is proportional to the greatest distance at which they can be distinguished, the same values of v substituted in $x = \frac{20}{v}$ will give x , which is the number of feet at which these letters with the height y can be read. To carry out the plan thus proposed involves the construction of a new series of test-types, but, in default of this, the ordinary Snellen card may be used, the numbers corresponding to the new values of V , as follows: Snellen Nos. XX, XXX, XL, L, LXX, C, CC. Visual acuity, 1; 0.7—, 0.5, 0.4, 0.3—, 0.2, 0.1. For values less than 0.1, the patient should move toward the test-type, and we have $V = \frac{20}{0.05} = 0.09$, etc.

Results of Treatment of Convergent Strabismus by the Correction of the Refractive Error, with and without Tenotomy.—Lang and Barrett ("Roy. Lond. Ophth. Hosp. Rep.," xii, 1) give the results of their observations extending over a period of four years. Their methods of observation were as follows: 1. The distant vision was tested for each eye with and without glasses. 2. The power of fixation of each eye was tested. 3. The movements of the eyes were examined, particular attention being given to the extent of the excursion outward of the squinting eye. 4. The angle of convergence was measured by a

modification of Landolt's method. 5. The iris and ciliary muscle were completely paralyzed with atropine, or with homatropine and cocaine. 6. The angle of convergence was again measured. 7. The refraction was estimated by retinoscopy, and the vision measured by the correcting glasses when practicable. 8. The full correction was ordered for each eye and the glasses procured and worn steadily, and the mydriatics were then discontinued. 9. The patients returned at intervals of three to six months. At these visits they were examined with respect to (A) The angle of convergence while the glasses were worn. (B) The angle of convergence when the glasses were removed. (C) The vision in each eye. (D) The presence of binocular or unocular vision as ascertained by the colored letter-test. 10. In those cases in which this treatment did not produce satisfactory results the internal rectus was divided. The angle of convergence was measured immediately before and after the operation, and at the usual intervals of three to six months. In no case were the two interni divided at the same time. The authors draw the following conclusions: 1. The spectacle treatment of convergent strabismus produces a rapid and complete cure in about 10 per cent. of the cases. 2. In a larger number (33 per cent.) the cure continues so long as the glasses are worn. 3. The effect of this treatment is in direct ratio to the youth of the patient. 4. Spectacle treatment should therefore, in the great majority of cases, be adopted as an indispensable preliminary adjunct to any operative treatment. 5. If the spectacle treatment fails to produce absolute cure, a division of the internal rectus generally suffices, together with the use of glasses, to remedy the deformity.

Edema of the Suprachorioidea in Glaucoma.—Schlegtendal ("Kl. Mon. f. Aug.," Feb., 1888) offers a very different explanation of the views of Stölting in regard to the fibrous network of the suprachoroidal space in glaucoma. He regards the phenomena here met with as artificial, produced by the process of hardening of the eyeball and the action of the celloidin in which the globe is imbedded for the purpose of making sections. To the same cause he attributes the folds in the iris and the detachment of the retina and chorioid, either together or both from the sclera, and also the very common detachments of the ciliary body from the sclera. The hardening process is brought about by the evaporation of the ether, which also causes a diminution of the volume of celloidin. The ether escapes not only outward, but also within the inclosing vessel which contains the imbedding mass, and here the process of shrinking meets with no hindrance. But the reverse is the case in the mass in which the eyeball is imbedded, for as the latter slowly shrinks it draws along with membranes behind which some celloidin also exists, such as the chorioid, and the celloidin enters the spaces of the suprachorioidea and produces the results seen with the microscope.

Tumor of the Optic Nerve.—Lawson ("Roy. Lond. Ophth. Hosp. Rep.," xii, 1) reports an interesting case in a boy aged twelve. Two months before, the left eye was first noticed to protrude, and this protrusion had steadily increased and the vision had steadily failed. The boy had complained of frontal headache and of pain behind the ear, but of no pain in the eye. The left eye protruded forward and downward, but the motility was still good. At the upper and inner part of the orbit a hard mass was felt, extending backward in close contact with the roof of the orbit. There was no nasal obstruction, no deafness, no posterior palatine growth, and no glandular enlargement. There was no perception of light in the left eye and the pupil was insensible to light. The optic disc was white, the margin blurred, and the veins were engorged and tortuous. The other eye was normal. An exploratory incision was made through the upper lid in a line parallel with the roof of the orbit, and a finger being passed into the orbit, detected a tumor which entirely surrounded the optic nerve. The eye was then enucleated with the tumor *en masse* and the wound through the upper lid closed with sutures. The tumor extended backward from the sclera about 23 mm. It was irregularly pear-shaped, the smaller end forward, and measured 18.5 mm. in diameter. Its surface was lobulated, and it was entirely inclosed within the sheath of the optic nerve. Immediately behind the eye there was a fusiform swelling of the nerve measuring 10.5 mm. in its greatest diameter at a distance of 10 mm. behind the eye. It then gradually tapered down to the point at which it was divided. Between the swollen nerve and the dural sheath was the new growth, which had a porous, speckled appearance. There were several small

points of extravasation in the growth, and two small cysts close to the capsule. The new growth proved to be a sarcoma of the loose connective-tissue type, which was in places undergoing myxomatous degeneration. It probably grew from the connective tissue of the inner sheath, or from the loose tissue of the intersheath space.

Tobacco Amblyopia.—Dojne (*ibid.*) reports one case of unocular central amblyopia in a man, aged thirty-eight, a tobacco smoker. The left eye remained normal throughout, and the central scotoma eventually disappeared from the right eye. In a second case, binocular central scotoma in a smoker, a man aged twenty-nine, Dojne adopted the plan of bandaging the eyes to exclude the light on the following theory: Admitting the hypothesis that there exists in the human retina a substance analogous to the visual purple, and that there is produced in it, by the action of light, a chemical change which gives the stimuli conveyed by the nerve-fibers to the brain, exciting there visual impressions, he deduces—1. That tobacco may have a toxic influence on this substance, inducing degeneration in it and thereby causing retinal exhaustion, especially in those who are debilitated from any cause or who are susceptible to its influence. 2. That the exhaustion shows itself in the failure of the more delicate color-sense. 3. That the exhaustion naturally takes place at the point of greatest retinal activity. 4. That the patients, as a rule, see better in dull light because there is less retinal exhaustion produced by its action.

The Galvano-cautery in Conjunctivitis Follicularis.—Reich ("Kl. Mon. f. Aug.," Feb., 1888) recommends the use of the galvano-cautery in this disease, and advises the cauterization of each individual follicle, first anæsthetizing the conjunctiva with cocaine. Small, grayish sloughs appear at the points cauterized, which are soon cast off, producing a loss of substance which rapidly cicatrizes, and are so small that they do not produce any perceptible contraction of the conjunctiva in any direction. In fact, the conjunctiva retains almost intact its softness, elasticity, and vitality. A more extensive cauterization is not necessary in the early stages of follicular conjunctivitis, and thus the danger of the formation of extensive masses of cicatricial tissue is avoided. In the *culs-de-sac* a more extensive cauterization is permissible, and here a cautery with a larger surface may be employed. Where the follicular deposit is in the palpebral conjunctiva, the punctate cauterization is to be preferred, and in the case of the upper it should be very carefully done. Repeated cauterization of a few follicles at a time is better than one extensive cauterization of the whole diseased surface at a single sitting, so as to avoid producing any marked reaction. When there is considerable hyperæmia, swelling, and secretion of the conjunctiva, the galvano-cautery should be employed with caution, and it is better to wait until these inflammatory symptoms have been reduced before cauterizing the follicles. After the cauterization it is well to thoroughly irrigate the whole conjunctival surface with a sublimate solution of 1 to 5,000.

Can Overuse of the Retina cause Organic Disease of the Fundus?—Nettleship ("Ophth. Rev.," Feb., 1888) considers that the well-known predisposition of the optic disc and region of the yellow spot to inflammatory and degenerative disease, due to various local and constitutional causes, prepares us to admit the possibility that overuse of the retina may cause organic disease of the fundus. Still the only retinal affections which can at present be positively attributed to the effect of overuse are the temporary, though prolonged, exhaustion which occurs in endemic night blindness (torpid retina), and forms also a part of what is called snow-, ice-, and electric-light blindness, and which is not accompanied by any visible ophthalmoscopic changes; and the inflammatory changes which have in a few cases occurred on exposure to the intense light and heat of direct sun-rays. Some few cases, however, do occur of disease localized at the yellow spot in which overuse may have had a principal share in producing the result. The much commoner occurrence of similar cases without apparently any connection with too great functional activity of the retina does not weaken the suggestion that intense light or prolonged use are sometimes important factors in the production of neuro-chorioiditis.

A New Practical Ophthalmometer.—Leroy and Dubois ("Rev. gén. d'ophtal.," Feb. 29, 1888) have devised a new ophthalmometer which they describe as follows: A combination of two thick pieces of glass, with plane and parallel surfaces, mounted in a cubic box, is placed in

front of the objective of a telescope. These pieces of glass revolve around a common axis, so that in inclining the one on the other they produce double images of a point distant from each other any wished-for distance. A screw stops in the desired position each of the needles, the movement of which guides the corresponding glass plate. The telescope is composed of an achromatic objective of about 12 cm., and a powerful ocular. A transverse graduated rule is fixed to the tube, and the length of the tube is so regulated that the distance of the object, seen exactly on the face of the rule turned toward the object, is 340 mm. This rule carries two sights, the images of which, reflected by the cornea, should be seen through the telescope. One of these sights is a white rectangle framed in black, and the other is a similar rectangle carrying seven stripes, 5 mm. wide, and alternately black and white. These enameled sights are mounted on a traveler, the reverse side of which carries a reading mark. The cubical box is fitted to the telescope by a ring which glides smoothly over the barrel, the posterior border of which is notched. A pin penetrating this notch so trims the box that the axis of rotation of the glass plates is normal to the rule. The telescope may be freely rotated round its axis, carrying the rule and the box. It carries a needle parallel to the rule, which moves along the arc of a semicircle graduated in distances of 5° , and indicates the inclination to the horizon of the meridian under observation. One or the other of the notches in the anterior borders of the cubical box and the upper edge of the rule, placed at zero, constitutes the line of direction which passes by the object when at the point of fixation. The notch opposite the division 90 in the upper edge of the graduated semicircle, and the point of the guidon fixed at the anterior extremity of the cubical box, determine a visual line, which also passes by the object when at the point of fixation. This plane and this visual line aid in aiming approximately at the point of fixation without looking through the telescope. A Placido's disc has been added to the apparatus for the measurement of irregular corneæ in the place of the cubical box.

The New Local Anæsthetic, Hydrochloride of Erythrophleine.—Alt ("Amer. Jour. of Ophth.," Feb., 1888) describes this new drug as follows: The substance as obtained from the chemist was a fine straw-colored powder, readily soluble in water, and giving a clear, odorless solution. Some, of a one-tenth-per-cent. solution, when heated with sulphuric acid, assumed a yellowish-red tint. One drop of this solution instilled into the human *cul-de-sac* produced a noticeable anæsthesia of the conjunctiva in two minutes, which became profound in from seven to nine minutes. The cornea became anæsthetic much later; even after twenty minutes the cornea was still sensitive. The blood-vessels of the conjunctiva did not seem to be much affected, and the pupil and accommodation were not at all affected by a solution of the above strength. A disagreeable burning sensation was produced, which lasted for some time. The anæsthesia produced by one such drop lasted about four hours for the cornea.

The Ocular Symptoms of Lepra and their Treatment.—Panas ("Arch. d'ophthal.," Nov.-Dec., 1887) considers that the favorite location of the leprous tubercles in the eye is the sclero-corneal limbus. Thence they spread to the cornea, and extend both superficially and deeply, causing more or less opacity. As the lesion extends more deeply, the iris becomes involved, and posterior synechiæ are formed. In some cases real leprous nodules develop in the iris, independently of those in the cornea. The color of the conjunctival and corneal nodules is a yellowish-white, and they are sometimes vascularized. They cause but little pain or photophobia. The sensibility of the cornea involved is somewhat blunted to the touch, but the sensibility to pain produced by an operation is not so. The nodules under the microscope show a mass of lymphoid cells full of leprous bacteria. The corneal epithelium remains for a long time intact, unless xerosis supervenes, but the corneal tissue proper early becomes infiltrated, and the anterior chamber may be opened by the growing mass. The little tumors are dense and fibrous in consistence. If the disease is not checked, the cornea ulcerates through, the eyeball is perforated, and atrophy of the globe ensues. Panas recommends an early removal of all the nodules as completely as possible, and subsequent lotion of a solution of carbolic acid (1 to 2,000).

Paralysis of Convergence in Progressive Locomotor Ataxia.—Borel (*ibid.*) thinks that the division of the roots of the oculomo-

torius into multiple nuclei may explain the occurrence of this paralysis of convergence, since the nuclei of the internal recti occupy the median part of the floor of the aqueduct of Sylvius. It is supposable that a portion of the nucleus presides over convergence, and another portion directs the lateral movements. These examples of tabetic paralysis of the associated movements of the eyes certainly do not belong to the category of peripheral paralyses caused by ataxic neuritis. The muscular asthenopia of ataxy may easily escape recognition if the visual acuity of one or both eyes does not admit of a manifestation of the difficulties of convergence. The temporary character of these lesions in the associated movements of the internal recti muscles is a proof that they should be regarded as actual paralyses. No case can be regarded as belonging to this category in which the visual field is not normal. Moreover, the power of convergence is by no means always interfered with in ataxy; on the contrary, it may be markedly increased. Still, the center for convergence is frequently involved in the disease, but there is frequently no direct relation between the degree of the paralysis, measured by the perimeter, and the maximum of convergence. Sometimes the field-of-vision examination shows the oculomotorius to be intact, and here we attribute the cause of the variations of the amplitude of convergence to a concomitant lesion of several centers presiding over different movements.

The Anatomy of Serpiginous Ulcer of the Cornea.—Verdesse (*ibid.*) takes up the origin of hypopyon in serpiginous ulcer of the cornea. In this disease it has been proved that Bowman's membrane is infiltrated with lymphoid cells, while in the membrane of Descemet no wandering cells have ever been found. In view of this fact, it has been considered that the probable cause of the presence of pus in the anterior chamber is a prolapse of the posterior limiting membrane and the passage of the pus-cells from the cornea through the rent into the aqueous humor. This view Verdesse thinks must be modified, as he considers the presence of the hypopyum due directly to a rupture of the membrane of Descemet which is not a real elastic membrane, as has been proved by its reaction with coloring matters. According to Ranvier, the membrane of Descemet is extremely fragile. In specimens examined by Verdesse the membrane at the point of rupture was found to be the seat of a finely granular transformation, due probably to the compression exerted by the collection of lymphoid cells in its neighborhood. The leucocytes found in the anterior chamber are comparatively so few that they may be readily assumed as coming entirely from the cornea through the rupture in the posterior limiting membrane. Those lymphoid cells which have by their gravity reached Fontana's spaces below here set up an irritation which causes infiltration of the sheath of the vessels with numerous leucocytes. The iris takes no part in this inflammatory process. The filament met with so often in this form of corneal trouble which is attached to the posterior surface of the cornea and floats in the aqueous humor, and which has been regarded as pathognomonic of a serpiginous corneal ulcer, must now be regarded as equally pathognomonic of a rupture of the membrane of Descemet. The little abscess which causes the rupture of the posterior limiting membrane and which infiltrates and separates the deep bundles of corneal fibers becomes the origin of a new ulcerative process which extends from behind toward the superficial parts. The incision recommended by Saemisch in these cases, which splits the entire ulcer, makes a communication between the deep and the superficial ulcerative processes, and thus enables the disinfecting agents to destroy the germs lodged in the tissues.

Astigmatism.—Bettremieux (*ibid.*) thinks that the blepharospasm met with so frequently in astigmatic patients is due to the existence of an instinctive closure of the lids in the interest of improved vision, and that instinctive closure is at some period transformed into an involuntary and at times painful veritable blepharospasm. He admits also the possibility that the contraction of the lids may produce a dynamical compensatory astigmatism which temporarily modifies the shape of the eye. Mydriasis is an important symptom if not produced by a drug, and provided it is not excessive but moderate, as in some cases of myopia. Bettremieux thinks that mydriasis of one eye may be induced by the irregular and spasmodic contractions of the ciliary muscle provoked by astigmatism in the other eye.

Ophthalmoplegia Externa following Faucial Diphtheria.—Evetsky (*ibid.*) reports several cases of this complication, one of them occurring

in his own practice, and gives a summary of the modern views on this subject. It is generally believed that the seat of the lesion of the oculomotor nerves in ophthalmoplegia externa is to be found in their nuclei. If we admit another locality it will be difficult to explain the existence of an isolated paralysis of the external ocular muscles alone, while the internal ocular muscles, the nerves of which run in the trunk of the oculomotorius by the side of the other paralyzed branches, remain entirely intact. In addition to this purely theoretical consideration there are a large number of clinical observations in favor of the above view, such as the complication of ophthalmoplegia with bulbar paralysis. Still, many neuro-pathologists hold that the anatomical seat of diphtheritic paralyzes must be looked for in multiple neuritis, and hence that they are not central but peripheral in origin.

Electric Ophthalmia.—Terrier (*ibid.*, Jan.-Feb., 1888) regards the ophthalmia produced by exposure to the electric light as a sort of ocular sunstroke, in which the membranes of the eye react much more violently than the skin. The ocular conjunctiva, which is exposed to the action of the electric light, is much more actively congested than the parts which are concealed by the lids. The action of the calorific rays in the production of this congestion may be entirely neglected, but we are not yet in a position to decide whether the active congestion is due to the chemical or luminous rays.

Binoocular Vision after the Operation for Strabismus.—Landolt (*ibid.*) formulates his conclusions on this subject as follows: If the case is one of inveterate strabismus of a high degree; if the vision of the deviating eye is very defective, or if there exists such a difference in the refraction of the two eyes that there is great difficulty in fusing the two retinal images; or in all the cases in which the orthoptic treatment fails and an operation is necessary to render the eyes parallel—the restoration of binocular vision is a desideratum very much to be desired, and to be brought about by any means in our power. The treatment should commence by the correction of the astigmatism and the hypermetropia; this should be followed by the experiments with the colored glass and the flame of a candle, and then by that with the stereoscope; finally, the experiment of Hering should be carried out, which usually institutes a cure.

Cataract Extraction with Irrigation of the Anterior Chamber.—Panas (*ibid.*) gives the results of 460 extractions of non-traumatic cataract done at the clinique of the Hôtel Dieu since April, 1884. From May to the end of December, 1884, 50 extractions were made, without iridectomy, with irrigation of the anterior chamber by a solution of mercuric biniodide (1 to 20,000). Of these, 48 were complete successes, in one case there was secondary pupillary occlusion, and in one case the eye was lost by purulent irido-cyclitis coming on seven days after the operation. In 1885 there were 109 extractions, with 101 complete successes and 8 imperfect successes from pupillary obstruction. In 1886 there were 87 extractions, with 84 complete successes, 2 imperfect results, and one eye was lost from purulent iritis, beginning on the second day after the operation. In 1887 there were 213 extractions, in 115 of which the irrigating fluid employed was the mercuric biniodide, and in the remainder a saturated solution of boric acid was used. There was no case of suppuration, but there were 11 cases of plastic iritis and 14 cases of incarceration of the iris. Of the group of 115 cases, 66 were perfect results, 27 were fairly good, and 20 were imperfect. Among the entire number of 460 extractions, incarceration of the iris occurred 23 times, suppuration with total loss of the eye occurred in 2 cases, there were 31 cases of imperfect vision, and 437 cases of good vision.

One Hundred Consecutive Cases of Cataract, Mature and Immature, treated by Intra-ocular Injection.—McKeown ("British Med. Jour."; "Amer. Jour. of Ophthal.," Jan., 1888) presents the statistics of 100 cases of cataract, of all degrees of maturity and immaturity, in which he employed intra-ocular injection. Among the 100 cases are a large number of cases of striated cortex with clear triangles interspersed, through which portions of the fundus could be seen. There were 81 cases of idiopathic uncomplicated cataract, 5 cases of complicated cataract, and 14 traumatic cataracts. Of the 81 cases, 13 patients before the operation could see to go about; 9 had striated cortex with transparent triangular areas. Among the 81 cases, there were 8 cases of loss of vitreous, only 2 of which occurred during injection. There

was 1 case of panophthalmitis occurring three weeks after operation. There were 3 cases of severe iritis; of these, one patient now counts fingers at four feet, another at one foot, and another at six inches. Vision in all three is capable of improvement. There were 3 cases of iridocyclitis and chorioiditis. In all the cases operated upon, except 30, distilled water at the temperature of the body was injected, and in no case was there any evidence of intra-ocular inoculation. The force employed in the injection does not seem to have produced any dangerous results. Panas's solution was injected in 30 cases. In 2 cases it did not prevent suppuration of the cornea and panophthalmitis, and McKeown thinks it may induce iritis. He also thinks that the method of contracting the pupil by pouring eserine solutions into the *cul-de-sac* is quite as effectual as De Wecker's method of injecting it into the anterior chamber. He does not apply the bandage until the pupil is well contracted. The instrument used in the injection should be so constructed and capable of exercising such force as to clear out the remains of the lens without regard to tension. McKeown considers iridectomy unnecessary except in very immature cataracts. The method of intra-ocular injection may be used in every sort of extraction except the removal of the lens in its capsule.

The Operative Treatment of Zonular Cataract.—Little (*ibid.*) confines his observations to those cases of ordinary uncomplicated zonular cataract in which there is no arrest in the development of the eye, no shrinking of the lens, and no vitreous opacity or deeper seated disease. When destruction of the lens is decided upon, he recommends a free crucial incision of the capsule with a needle, and two or three days later he performs extraction by means of a Teale's suction instrument. He recommends destruction of the lens in all cases of a progressive character, and also in non-progressive cases where vision equal to $\frac{2}{3}$ can not be obtained, after dilating the pupil with atropia. The suction operation he performs as follows: The pupil being dilated, a free rupture of the capsule is made, extending entirely across the pupil, and another one at right angles to the first. A light bandage is then placed over the eye for two or three days, and atropia freely employed. Then an incision is made in the outer part of the cornea, midway between limbus and center, with a double-cutting edged needle. Through this wound the curette is introduced into the area of the pupil, and suction is then applied by the mouth, and the pupil thus easily and rapidly cured. Atropine is then instilled, a bandage applied over both eyes, and the patient placed in bed. In the course of a week or ten days recovery may fairly be expected.

Miscellany.

The New Jersey State Asylum for the Insane at Morristown.—The following is the text of Dr. Edward C. Booth's letter to the board of managers, dated July 18th, tendering his resignation as medical director:

In the year 1886, at your request, after some years' service as assistant physician, I accepted the office of medical director of the State Asylum for the Insane at Morristown. I did this with some misgivings as to the working of the new system; but I was encouraged by assurances of the hearty support of the managers and the warden, with whom my personal relations had been most kind. The system is faulty, and the best results can not be obtained under it; yet, with a competent and reasonable man, devoted to the welfare of the patients, at the head of each department, its defects might be to a considerable extent remedied. It is not for me to say whether I am such a person; but it is only justice to declare plainly that, in my judgment, the warden is not; and in this view I am confirmed by the practically unanimous opinion of those who have had an opportunity to know how he has discharged his duties. I say this with no ill-will to the warden, with whom I have always been able, though at times with difficulty, to keep up the outward forms of courtesy. The medical department has been made so dependent upon that of the warden that any mismanagement on his part is immediately felt therein. I sought to correct the evils that

arose by exercising the power given to me and by defending the medical department from the warden's repeated encroachments. Thus, when the regular diet prescribed and furnished by him proved unfit, the physicians resorted freely to their power to order special diet, taking pains to cause as little inconvenience as possible. When these orders were disobeyed, as they were continually, my only resource was to complain to your board. This I did, avoiding for a time complaints of the warden's deficiencies in his legitimate department. When, however, a public investigation was ordered, through no act of mine, I considered it my duty to disclose as fully as possible all neglects that affected the comfort and treatment of the patients. It was my hope that the managers, who alone have the power to introduce reforms, would assume an impartial attitude. It was, therefore, a painful surprise to me to find that before hearing the evidence several of them had openly taken sides with the warden, resenting the offer of evidence of his mismanagement; and that the exposure before the Legislative Committee of abuses which it was impossible to conceal truthfully was regarded by some of the managers as an attack upon themselves. The discharge of one of my assistants, Dr. McFarlane, a physician of high character and promise, for no offense other than in zealous service in the investigation ordered by the Legislature, including a call made by him at my request upon one of the employees of the warden's department, to procure her statement, a discharge made without consulting me and, so far as I can learn, without consulting any officer of the asylum except the warden, together with the fact that it seems to be the settled policy of the managers and the warden to inflict the penalty of summary dismissal upon any employee who should testify to abuses, destroys all presumption of a serious determination to reform the management. Apart from these considerations, my position has long been most painful from the consciousness that I could not secure proper treatment of the patients. Accordingly, I am constrained to add my name to the long roll of physicians who during the last three years have for similar causes resigned their offices in the Morris Plains asylum, and hereby tender to you my resignation as medical director. By the terms of my engagement you are entitled to three months' notice, but I request the board to fix as early a date as possible for my relief. It remains only to say that in leaving the asylum, where I have spent nearly six years of my life, I desire to retain in memory only the personal courtesies I have received, and to express the hope that this magnificent building, which will stand for generations after the present differences and difficulties are forgotten, will yet amply fulfill the noble purpose for which it was erected.

The Southern Surgical and Gynecological Association will hold its annual meeting at Birmingham, Ala., on the 11th, 12th, and 13th of September. The preliminary programme is as follows:

The President's Annual Address, by Dr. W. D. Haggard, of Nashville, Tenn.; The Annual Oration, by Dr. W. F. Hyer, of Holly Springs, Miss.; "Floating Kidney, with Vicarious Menstruation," by Dr. DeSaussure Ford, of Augusta, Ga.; "Gastrostomy," by Dr. W. B. Rogers, of Memphis, Tenn.; "The Medical Treatment of Fibroid Tumors of the Uterus," by Dr. Bedford Brown, of Alexandria, Va.; "Indications for Operative Interference in Cerebral Troubles," by Dr. T. O. Summers, of Jacksonville, Fla.; "A Case of Tubal Pregnancy presenting Interesting Medico-legal Relations," by Dr. E. P. Sale, of Aberdeen, Miss.; "Superinvolution of the Uterus following Trachelorrhaphy," by Dr. Virgil O. Hardon, of Atlanta, Ga.; "Dermoid Cysts of the Coccygeal Region," and "Electrolysis in Gynecology and Surgery," by Dr. E. J. Beall, of Fort Worth, Texas; "Alexander's Operation," by Dr. W. L. Nichol, of Nashville, Tenn.; "Hysterectomy in Cancer of the Uterus," by Dr. W. H. Wathen, of Louisville, Ky.; "The Extravagancies and Impracticable Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is concerned," by Dr. J. M. Taylor, of Corinth, Miss.; "Treatment of Fractures with Plaster-of-Paris Splints," by Dr. W. F. Westmoreland, Jr., of Atlanta, Ga.; "The Present Status of Electrotherapeutics in Gynecology," by Dr. J. R. Buist, of Nashville, Tenn.; "Antiseptics in Surgery and Gynecology," by Dr. F. T. Meriwether, of Asheville, N. C.; "The Attitude of Removal of the Uterine Appendages for the Cure of the Convulsive Neuroses," by Dr. W. Locke Chew, of Birmingham, Ala.; "Interesting Cases of Surgery," by Dr. R. M.

Cunningham, of Pratt Mines, Ala.; "My Antiseptic Bags, or Practical Aseptic Surgery," by Dr. J. W. Long, of Randleman, N. C.; "The New Departure in Uterine Therapeutics—the Dry Method," by Dr. T. A. Means, of Montgomery, Ala.; "A Study of the Various Methods of Treatment of Laceration of the Perinæum and Rectocele, with Report of Cases," by Dr. J. H. Blanks, of Meridian, Miss.; "Report of a Case of Spinal Concussion," by Dr. John R. Page, of Birmingham, Ala.; "Fractures of the Forearm," by Dr. John Brownrigg, of Columbus, Miss.; "Some Practical Thoughts in Surgery," by Dr. James Guild, of Tuscaloosa, Ala.; "Perineal Lacerations," by Dr. M. C. Baldridge, of Huntsville, Ala.; "Electrolysis in the Treatment of Urethral Strictures," by Dr. S. M. Hogan, of Union Springs, Ala.; "The Field and Limitation of Laparotomy," by Dr. I. S. Stone, of Lincoln, Va.; "Operative Procedures in Hypertrophy of the Prostate," by Dr. R. D. Webb, of Birmingham, Ala.; and a discussion on "Abdominal Surgery." Dr. John Herbert Claiborne, Dr. Duncan Eve, Dr. Paul F. Eve, Dr. W. T. Briggs, and others will present papers, but as yet have not stated their subjects.

The Lehigh Valley Medical Association will hold its eighth annual meeting at the Paxinosa Inn, Easton, Pa., on Wednesday, August 15th. There will be an address by the president, Dr. W. B. Erdman, of Mauncie, also an address on "The Treatment of Lung Cavities," by Dr. Thomas J. Mays, of Philadelphia.

The Health of Boston.—During the week ending Saturday, August 4th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: 22 cases of diphtheria and 5 deaths; 7 cases of scarlet fever; 14 cases of typhoid fever and 2 deaths; 7 cases of measles. There were also 28 deaths from consumption, 4 from pneumonia, 2 from whooping-cough, 14 from heart disease, 2 from bronchitis, and 10 from marasmus. The total number of deaths was 244, against 260 in the corresponding week last year.

The Health of Michigan.—It appears from the State Board of Health's summary of returns for the month of July (the four weeks ending July 28th) that, as compared with the same month in the preceding nine years, there was no disease more prevalent, while intermittent fever, remittent fever, diarrhoea, cholera morbus, diphtheria, cholera infantum, amygdalitis, and pulmonary consumption were less prevalent.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 3d:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending July 14th corresponded to an annual rate of 15.7 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 10.6, and the highest in Bolton, viz., 28.5 in a thousand. Small-pox caused 6 deaths in Preston, 1 in Bolton, 2 in Sheffield, and 1 in Leeds. Diphtheria caused 2 deaths in Manchester.

London.—One thousand two hundred and eighty-eight deaths were registered during the week, including small-pox, 1; measles, 26; scarlet fever, 18; diphtheria, 24; whooping-cough, 32; enteric fever, 12; diarrhoea and dysentery, 72; simple cholera and choleraic diarrhoea, 3. Diseases of the respiratory organs caused 164 deaths; different forms of violence, 56; and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.7 in a thousand. In greater London 1,563 deaths were registered, corresponding to an annual rate of 14.8 in a thousand of the population. In the "outer ring" 6 deaths from whooping-cough and 13 from diphtheria were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending July 14th in the sixteen principal town districts of Ireland was 19.8 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 4.2, and the highest in Drogheda, viz., 38.1 in a thousand. In Dublin 153 deaths were registered, including whooping-cough, 8; enteric fever, 1; scarlet fever, 4; typhus, 1; and diarrhoea, 6.

Scotland.—The deaths registered in eight principal towns during the week ending July 14th corresponded to an annual rate of 16.1 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Perth, viz., 9.6, and the highest in Aberdeen, viz., 19.2 in a thousand. The aggregate number of deaths registered from all causes was 406, including measles, 3; scarlet fever, 1; diphtheria, 5; whooping-cough, 8; fever, 3; and diarrhoea, 8.

Martinique.—The United States consul, in his dispatch dated July 2d, states that "the health of St. Pierre and Fort de France continues excellent. During the week ending June 30th there were officially reported in the whole island 325 new cases of small-pox and 28 deaths. The commune of Gros Morne, about twenty miles from St. Pierre, had 202 of these new cases and 4 deaths."

July 7: "During the past week there are officially reported 191 cases and 27 deaths from small-pox. There were no new cases or deaths in Fort de France, but there were 2 new cases reported in St. Pierre, with no deaths."

Havana, Cuba.—Twenty-one deaths from yellow fever and 4 from small-pox were registered during the week ending July 21, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow	July 14.	545,678	165	...	...	...	...	1	...	2
Warsaw	July 7.	444,814	217	...	...	6	...	...	8	4
Calcutta	June 16.	433,219	202	11	...	...	...	...	...	...
Amsterdam	July 14.	389,916	120	...	...	...	...	1	...	2
Rome	May 26.	388,300	146	...	...	...	...	2	...	1
Copenhagen	July 10.	300,000	95	...	...	...	...	...	5	5
Munich	July 7.	275,000	169	...	...	...	...	1	5	3
Edinburgh	July 7.	262,733	85	...	...	1	...	...	1	3
Palermo	July 14.	250,000	98	...	...	...	...	1	...	5
Genoa	July 14.	179,570	71	...	...	2	...	...	...	...
Leipsic	July 14.	170,000	77	...	...	...	...	1	...	4
Trieste	July 7.	154,500	62	...	...	4	...	...	...	3
Toronto	July 21.	130,000	25	...	...	...	...	...	...	1
Stuttgart	July 14.	125,510	43	...	...	...	...	...	...	...
Bremen	July 7.	122,000	29	...	...	...	...	...	...	1
Havre	July 14.	112,074	67	...	...	4	...	3	...	...
Barmen	July 7.	109,000	41	...	...	...	...	...	...	...
Leighorn	July 15.	94,423	37	...	...	...	...	...	...	...
Leith	July 7.	74,320	20	...	...	...	...	...	...	...
Cadiz	July 14.	65,028	41	...	...	...	...	...	...	...
Guayaquil	June 3.	30,000	68	...	5	1	...	...	...	...
Guayaquil	June 10.	30,000	63	...	2	...	...	...	...	...
Curacao	July 20.	25,000	5	...	...	...	...	...	...	...
Vera Cruz	July 19.	23,800	16	...	...	...	...	...	...	...
Kingston, Can.	July 27.	16,216	4	...	...	...	...	...	...	...
Sagua la Grande	July 14.	15,605	7	...	...	...	...	...	...	...
Cartagena, Cola.	July 7.	13,000	8	...	...	...	...	...	...	...
Matamoras	July 14.	12,000	13	...	...	...	...	...	...	...
Laguayra	July 14.	7,428	3	...	...	...	...	...	...	...
Livingston	July 21.	2,500	3	...	...	...	...	...	...	...

UNITED STATES.

San Francisco, Cal.—The secretary of the health department informed this Bureau, under date of July 23d, that "the health officer to-day received the following dispatch from Hong-Kong: 'Cholera epidemic terminated July 9th.' Every precaution will be taken by the Board of Health to prevent the landing of infected persons or baggage from China at this port."

Nashville, Tenn.—The secretary of the State Board of Health reported 48 cases of small-pox in Tennessee from its first appearance this year to July 24th. The cases were distributed as follows: Jackson, 1; Memphis, 26; Shelby County, 1; Nashville, 12; Obion County, near Union City, 5; Rutherford County, 3. The secretary also states: "Precautions taken promptly, viz., isolation, vaccination, and disinfection. Think we have the disease under control now."

Buffalo, N. Y.—The medical officer in charge of the Marine-Hospital Service reported under date of July 30th as follows: "Since my last report in reference to small-pox in this city, 3 new cases have occurred in the same district. All have been taken to the city pest-house. The health officers have vaccinated 16,000 people gratuitously in the Polish quarter. There have been no deaths thus far."

Delaware Breakwater Quarantine Station.—One of the seamen admitted to hospital from the brig Teneriffe, suffering from yellow fever, died in the hospital on the 27th instant. He had black vomit. The captain and the other seaman are convalescent. The vessel has been

cleansed and fumigated, and is now being held in quarantine for further observation.

Tampa, Fla.—*Yellow Fever.*—Dr. J. P. Wall telegraphs as follows:

July 29th: "No new cases anywhere, and no sick."

July 31st: "One case at Plant City."

Instructions were given Dr. Wall to perform thorough disinfection of all dwellings and infected things in Tampa and Plant City, and similar instructions were sent to Surgeon Murray, at Manatee.

Manatee, Fla., August 1st.—The first two suspicious cases occurred last evening. Two others this morning. Manatee village guarded by 25 men. Suspicious houses have been disinfected. Probably 100 persons unacclimated, and liable to take the fever. No panic among the people. Inspection completed on the 27th of July.

August 2d: Three new cases reported.

Sanford, Fla.—The death of a baggage-master has been reported as of a suspicious character, and, although the local authorities deny the existence of any yellow fever, the circumstances will be investigated by Passed Assistant Surgeon John Guitéras.

Jackson, Mich.—Health Officer Mitchell reports that diphtheria prevails as an epidemic.

The following is the quarantine act which passed the Senate May 3, 1888, passed the House July 23, 1888, and was approved by the President August 2, 1888. Its provisions go into immediate effect, and the quarantine buildings will be erected as soon as practicable. Steps will be immediately taken to secure sites for the quarantines not now on Government land:

AN ACT to perfect the quarantine service of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That whenever any person shall trespass upon the grounds belonging to any quarantine reservation, or whenever any person, master, pilot, or owner of a vessel entering any port of the United States, shall so enter in violation of section one of the act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April twenty-ninth, eighteen hundred and seventy-eight, or in violation of the quarantine regulations framed under said act, such person, trespassing, or such master, pilot, or other person in command of a vessel shall, upon conviction thereof, pay a fine of not more than three hundred dollars, or be sentenced to imprisonment for a period of not more than thirty days, or shall be punished by both fine and imprisonment, at the discretion of the court. And it shall be the duty of the United States attorney in the district where the misdemeanor shall have been committed to take immediate cognizance of the offense, upon report made to him by any medical officer of the Marine-Hospital Service, or by any officer of the customs service, or by any State officer acting under authority of section five of said act.

SEC. 2. That, as soon after the passage of this act as practicable, the Secretary of the Treasury shall cause to be established, in addition to the quarantine established by the act approved March fifth, eighteen hundred and eighty-eight, quarantine stations, as follows: One at the mouth of the Delaware Bay; one near Cape Charles, at the entrance of the Chesapeake Bay; one on the Georgia coast; one at or near Key West; one in San Diego Harbor; one in San Francisco Harbor; and one at or near Port Townsend, at the entrance to Puget Sound; and the said quarantine stations when so established shall be conducted by the Marine-Hospital Service under regulations framed in accordance with the act of April twenty-ninth, eighteen hundred and seventy-eight.

SEC. 3. That there are appropriated for the purposes of this act the following sums, out of any money in the Treasury not otherwise appropriated, for the construction, equipment, and necessary expenses of maintaining the same for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine:

For the Delaware Breakwater quarantine: Construction of disinfecting machinery, steam-tug, warehouse, officers' quarters, and expenses of maintenance for the fiscal year eighteen hundred and eighty-nine, seventy-five thousand dollars.

For the quarantine station near Cape Charles, Virginia: For the purchase of site, construction of wharf, repair of present hospital build-

ings and officers' quarters, disinfecting machinery, steam-tug, expenses of maintenance for the year eighteen hundred and eighty-nine, one hundred and twelve thousand dollars.

For the South Atlantic Station (Sapelo Sound): Construction of disinfecting machinery, warehouse, wharf, small boats, and expenses of maintenance for the year eighteen hundred and eighty-nine, thirty-eight thousand five hundred dollars.

For the quarantine near Key West: Purchase of site, construction of disinfecting machinery, warehouse, small boats, steam-tug, hospital buildings and officers' quarters, expenses of maintenance for the year eighteen hundred and eighty-nine, eighty-eight thousand dollars.

For the Gulf quarantine (formerly Ship Island), provided for by the act of March fifth, eighteen hundred and eighty-eight, in addition to the amount appropriated by the act approved March fifth, eighteen hundred and eighty-eight: For the expenses for the year ending June thirtieth, eighteen hundred and eighty-nine, fifteen thousand dollars.

Quarantine station, San Diego Harbor, California: For the purchase of site and the construction of disinfecting machinery, warehouse, small boats, hospital buildings, officers' quarters, and for expenses of maintenance for eighteen hundred and eighty-nine, fifty-five thousand five hundred dollars.

For the quarantine station at San Francisco, California: Hospital buildings and officers' quarters, disinfecting machinery, warehouse and wharf, steam-tug, small boats, expenses for the fiscal year eighteen hundred and eighty-nine, one hundred and three thousand dollars.

For the quarantine station at Port Townsend: For the purchase of site, construction of disinfecting machinery, warehouse, small boats, hospital buildings, and officers' quarters, for expenses of maintenance for the fiscal year eighteen hundred and eighty-nine, fifty-five thousand five hundred dollars.

Approved August 2, 1888.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhoid fever.	Enteric fever.	Scurvy.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	July 28.	1,529,444	1,002	..	..	..	..	13	19	35	23	29	..
Philadelphia, Pa.	July 28.	1,016,758	459	..	..	3	..	23	2	..	1	..	..
Chicago, Ill.	July 28.	800,000	399	..	..	..	..	7	7	5	8	..	..
Brooklyn, N. Y.	July 21.	793,960	512	..	..	..	..	..	8	19	1	5	..
Baltimore, Md.	July 28.	431,879	219	..	..	..	..	2	2	1	2	1	..
Boston, Mass.	July 28.	415,000	240	..	..	..	..	4	7	..	..	2	..
Cincinnati, O.	July 28.	255,139	115	..	..	..	..	2	2	..	..	1	..
New Orleans, La.	July 21.	248,000	125	..	..	..	..	1	3	..	..	..	..
Pittsburgh, Pa.	July 31.	230,000	101	..	..	..	..	10	3	..	3	1	..
Wash'gton, D. C.	July 28.	225,000	103	..	..	..	..	3	1	2	..	8	..
Detroit, Mich.	July 28.	220,000	93	..	..	..	..	..	..	1	1	1	..
Milwaukee, Wis.	July 28.	195,000	64	..	..	..	..	1	1	1	..	..	..
Minn'polis, Minn.	July 27.	180,000	91	..	..	..	..	1	1	..	..	..	..
Kansas City, Mo.	July 28.	180,000	53	..	..	..	..	9	..	..	..	1	..
St. Paul, Minn.	July 28.	175,000	46	..	..	..	..	4	..	..	..	1	..
Rochester, N. Y.	July 27.	120,000	62	..	..	..	..	..	1	..	..	..	..
Denver, Col.	July 28.	96,000	27	..	..	..	..	3	5	..	..	..	..
Toledo, Ohio	July 28.	80,000	35	..	..	..	..	1	..	..	..	..	..
Fall River, Mass.	July 28.	65,000	56	..	..	..	..	..	1	1	1	..	..
Cambridge, Mass.	July 28.	64,079	40	..	..	..	..	..	1	1	1	..	..
Charleston, S. C.	July 28.	60,145	40	..	..	..	..	..	1	..	..	..	..
Reading, Pa.	July 30.	60,000	33	..	..	..	..	1	..	..	..	..	..
Wilmington, Del.	July 28.	57,000	32	..	..	..	..	..	1	..	..	..	..
Evansville, Ind.	July 26.	53,000	27	..	..	..	..	..	1	..	..	..	..
Savannah, Ga.	July 27.	52,827	17	..	..	..	..	..	..	..	..	1	..
Lynn, Mass.	July 28.	50,000	9	..	..	..	..	..	1	..	..	..	..
Manchester, N. H.	July 28.	41,000	24	..	..	..	..	..	..	..	..	..	..
Galveston, Texas	July 20.	40,000	16	..	..	..	..	..	..	..	..	..	..
Mobile, Ala.	July 28.	40,000	16	..	..	..	..	..	..	..	..	..	..
Portland, Me.	July 28.	40,000	..	..	..	..	..	..	2	..	..	..	..
Springfield, Mass.	July 28.	40,000	26	..	..	..	..	..	2	..	..	..	..
Fort Wayne, Ind.	July 30.	39,000	15	..	..	..	..	..	..	..	..	..	..
Wheeling, W. Va.	July 28.	35,000	12	..	..	..	..	1	..	..	..	..	..
E. Saginaw, Mich.	July 28.	33,800	7	..	..	..	..	..	..	..	..	..	..
New Bedford, Mass.	July 28.	26,845	18	..	..	..	..	..	..	..	..	..	..
Auburn, N. Y.	July 28.	26,000	6	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.	July 28.	25,000	11	..	..	..	..	..	..	..	..	..	..
Jackson, Mich.	July 28.	22,500	8	..	..	..	..	..	..	..	..	..	..
Newton, Mass.	July 28.	21,105	6	..	..	..	..	..	..	1	..	..	..
Newport, R. I.	July 27.	20,000	8	..	..	..	..	..	..	1	..	..	..
Schenectady, N. Y.	July 30.	20,000	8	..	..	..	..	1	1	..	..	..	..

NOTE TO HEALTH OFFICERS.—Several of the reports received can not be given for the reason that the name of the city was not stated.

The Medical Corps of the Army.—An army medical board will be convened in New York on October 1, 1888, for the examination of such

persons as may be properly invited to present themselves before it as candidates for appointment in the medical corps of the army. Application for an invitation should be addressed to the Secretary of War, stating date and place of birth and place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits. Testimonials as to professional standing, from the professors of the medical college from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

ANSWERS TO CORRESPONDENTS.

No. 215.—On the ground now occupied by the Post Office.

No. 216.—The last volume published, vol. viii, takes the work to the title "Medicine, Naval."

No. 217.—In Berlin.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

A CLINICAL LECTURE

ON SERUMURIA AND ITS TREATMENT.*

DELIVERED AT THE NECKER HOSPITAL, PARIS.

By M. PETER,

PROFESSOR OF CLINICAL MEDICINE, FACULTY OF PARIS.

GENTLEMEN: I should like in this lecture to make you understand the synthesis of albuminuria, or rather *serumuria*, as I propose to call it, and I wish to show you how congestion can be transformed into inflammation, and how this last can degenerate.

It has been asked if the kidney was the organ that made the urine. In answer, it has been shown that it does not manufacture the urine, as we find urea in the blood, from which the deduction is drawn that urine is made in every part of the organism, so that the kidney only relieves the blood of its urinous elements. To prove this we have only to find out how much of the blood urea there is in urine. In blood serum we see 0.16 gramme of urea to 1,000 grammes of blood, and in the urine itself there is at least 19 grammes of urea to 1,000—that is to say, 100 times as much. What, then, is the part of the kidney that makes this marvelous selection from the blood, which results in such a complex product as urine? Is it the corpora malpighiana, or the tubuli contorti, or the tubuli recti? It is the glomerulus and the tubuli contorti; these last tubes are, as you know, tortuous, so that they will give a larger surface of contact. Bellini's tubuli recti are the vector tubes that carry to the summit of the Malpighian pyramids the urinary liquid that is secreted by the glomerulus and that selected in the tubuli contorti. But what is most interesting here is to show the part played by the vessels and the nerves. The renal plexus is certainly mostly an emanation from the great sympathetic, and anatomy with histology shows us that the renal artery constitutes, by an admirably constructed artifice, the Malpighian glomerulus. This is formed by a series of vascular loops surrounded by Bowman's capsule. The tortuous form of the arterial capillaries in the Malpighian corpuscle is intended to act in the same way as the tubuli contorti—that is to say, the surface is large, the circulation is *slowed up* as it were, and the extravasation of the serum of the blood is here accomplished.

But thus far we have not shown how the selection from the blood is made. The loops that form the glomerulus come out from the capsule in the form of arterial capillaries, which have very thin walls; they are covered by a sort of muscular sphincter that is supplied with nerve force from the renal plexus, and this acts by increasing or diminishing the pressure, contracting or dilating as it is acted upon by the nerve force. Here, then, is a constant modification, made at this point, in the circulation coming from the branches of the renal artery into the interior of the glomerulus. As for Bowman's capsule, it is made of a connect-

ive tissue that gives out projections to support the vascular loops. This is the circumvascular tissue, which acts a most important part in the secretion and extravasation of the liquid that constitutes urine; add to this that the tubuli contorti are lined with striated epithelium, and that the tubuli recti have a pavement epithelium, and you can see that the tortuous tubes play a considerable part in the selection and definite constitution of urine. The liquid that comes through the thin walls of the glomerulus may be called the *rudimentary urine*, and it is the striated epithelium of the tubuli contorti that continues the selection and constitutes the *definitive urine*.

Having said this much, let us see now what happens in certain physiological and pathological conditions. Take, for instance, pregnancy for the first and scarlatina for the second. In the last it is proved from cases of patients who have died in the acute stage of the disease while they had albuminuria that they had glomerulitis, with an inflammation not only of the corpuscles themselves, but also of the tubuli contorti—that is to say, of that particular portion of the kidney substance that forms the cortical substance. In fact, at this moment, by microscopical examination, and even by the naked eye, an enormous congestion of this part is seen, and, besides, there exists a kind of acute œdema of the whole of the kidney which increases the organ considerably in size. This is what pathological anatomy teaches us from an autopsy of an acute case of inflammation of the kidneys, a parenchymatous nephritis, in scarlatina. If this state persists, not only then is there inflammation with a violent hyperæmia, but also a tendency to phlegmonous inflammation itself, and in the tubes themselves will soon be found a considerable anatomical disturbance, an infiltration in the glomeruli, independent of the congestion of which I have already spoken; and besides, worst of all, in the tortuous tubes as well as in the tubuli recti, you will now find a degeneration of the epithelium. In place of its being clear, it is granular, discolored, and infiltrated, quite broken down in fact, and throughout the whole of the tubes there is a desquamation with a certain quantity of red and white globules and albumin, fibrin, etc., constituting a mass that ends at the Malpighian pyramids. You know that we may consider Bowman's capsule as the beginning of the tubuli contorti, so that the tortuous tubes are the continuation of the capsule; the tubuli recti are the tubes that follow, and in these also the same condition will be found, so that the whole trouble ends in what you see as casts or cylinders, and these are granular or granulo-fatty in nature or hyaline as the trouble is advanced or not. You can understand that this great congestion that commences in the glomerulus and that gives birth to a torrent that carries along with it all it comes across is dangerous; what happens is that the striated epithelium is first of all infiltrated, then swollen until it is broken up, and carried off in the shape of granular casts.

The most interesting part of all this trouble is the glomerulitis. After the congestion there is considerable pressure in the corpuscles, and not only is there an extravasation of the watery part of the blood serum, and

* Translated from stenographic notes by Thomas Linn, M. D., Paris, France.

salts, such as phosphates, carbonates, urates, etc.—in one word, all the substances held in suspension in urine—but there is also a loss of red and white blood globules. In all such autopsies as I have mentioned you will see that this fact is spoken of, but, according to my notion, there is not enough practical value derived from these facts as to treatment. There is also here a loss of *serum itself in its complete form*, and I wish here to return to the first part of this lecture where I said that it was not albuminuria but *serumuria*—that is to say, *that the totality of the serum with all its nutritive qualities was lost*. It is true that the red globules play an important part in vital functions, but it is none the less a fact that blood serum is the vector liquid of all that is nourishing in the blood, and if it is extravasated it is not only albumin that is lost, but all those grand life principles that the serum carries. The word *serumuria* is therefore much more exact and comprehensible than *albuminuria*. But in these cases there is not only *serumuria*; there is also a degradation of the whole kidney. The immense pressure in the glomerulus makes an inundation that carries along with it all the secreting epithelium of the tubes, and, gentlemen, you must understand that all vitality has its center in the cell structures. It is the cerebral cells that make thought, we do not know how. One finds it natural enough that an individual who has muscular atrophy has also certain lesions in the brain substance. Muscles are made up of cells which are the vital principles, and it follows that when the cells are diseased the muscle becomes atrophied, so that it carries in itself a power for good or evil that does not depend on the brain lesion. What is true for such cells is also true for the epithelial cells lining the kidney tubes, and, to come to the treatment of such states, it is the physician's duty to prevent this inundation that will sweep away the epithelial cells. So long as the condition is one of congestion alone, we can hope that the anatomical changes I have described have not yet reached a point of danger, and we may well believe that after the congestion has subsided the kidney will again continue its functions; but, if this inflammation is allowed to run on to a chronic phlegmonous form, it will then be too late to act, and I wish to insist on prompt and early action in all such cases. Without proper treatment the first red coloration of inflammation will be succeeded by a paleness of tissue, and this will be followed by a definite white color, an anæmia of the cortical substance, that only precedes by a little that of the tubes. The hyperæmia brings it to a phlegmonous inflammation, which last leads to a degeneration of the epithelium, and a replacement of the proper epithelium by a deeper sort, which has not the power of carrying on the function of the kidney. We have then what is called the *large white kidney*—large, because it is œdematous; white, because there is anæmia; and, most serious of all, it has lost the cells that carry on the selective action for the urinary secretion.

All this teaches us a great lesson. We know that the women who die of Bright's disease six, eight, ten months after confinement have a large white kidney, and there is evidence to prove that many of these women had been in fair health up to the time of pregnancy. The beginning of their troubles was a simple renal congestion,

caused by the uterine plethora; and post-mortems of acute nephritis after scarlatina show that the commencement of the difficulty was a simple hyperæmia. The therapeutic indication is therefore evident: we must prevent such processes from becoming chronic, and our duty is to act on the striated epithelium; but, curious to say, it has no nerves. Like the cerebral cells, it acts of itself, *proprio motu*, so that the physician can not act directly upon it, but he can use indirect means to accomplish his purpose by working on the great sympathetic nerve and the renal arteries—that is, on those arterial capillaries that are controlled by the branches of the sympathetic nerve (which, by the way, is one of the few well-named nerves). So, then, when you have a pregnant woman who has albumin in her urine—that is to say, *serumuria*—you should help the Malpighian glomeruli which are in difficulties. That is, try to prevent their congestion from becoming so intense that the inundation of serum I have spoken of will weaken the tortuous tubes and destroy the secreting epithelium. And, gentlemen, you can do this in a very simple way by *revulsion*. You will find that when you order cupping with the scarificator over the lumbar region in persons who have albumin in their urine, you diminish its quantity, and, having done so, it is evident that the pressure on the glomeruli has been taken off. You have, above all, acted on that very sensitive part, the vaso-motor nerves of the afferent artery, and perhaps also on the efferent artery, which by its loops constitutes the glomerulus. So, then, diminution of congestion is the motto here in the acute stage; and later on order tincture of iodine painted over the renal region, or, when the disease is of a still more chronic order, apply yourself a series of cautery points with Paquelin's cautery. You should also give purgatives from time to time, as you will thus diminish the congestion by a sort of compensating fluxion of the intestines; and if to this treatment you add milk, you will pass through the kidneys a liquid that has no irritating action, and you will wash out, as it were, the parts that are inflamed. It is only in this way that I understand the use of milk in renal troubles, for it can not cause albumin to disappear from the urine, as you can easily see in our cases of Bright's disease, which are only transformed by its use into a chronic phlegmonous form of inflammation, that might possibly have been prevented if the congestion had been reduced in time. I hope you have seen that there is an active congestion, which may be physiological, like that seen in pregnancy, or pathological, what is called *a frigore*, and also the congestion seen in infectious diseases (scarlatina, small-pox, typhoid fever, erysipelas, diphtheria, cholera, etc.). There is in all such cases a kind of temporary fluxion that causes the blood serum to pass into the urine along with some blood cells.

We have seen what active congestion will do. Let us take up *passive congestion*—that which is most often seen following heart diseases. Here there is a relative stagnation of blood in the veins and an interference with arterial circulation, and there follows a proliferation of a solid nature into the intercanalicular connective tissue of the kidney tubes; there is first a hyperæmia, next a phlogosis, and last sclerosis. This is what is called the *heart kidney*, and it also ends by losing

its secreting power. These patients have first a diminution of urine, and it is altered in quality; there is an increase of salts, urea is much less in quantity, and, if the region is exposed to cold, congestion of the kidney follows with serumuria. So you see what a large part the circulation plays in renal lesions. Another one of these kidney troubles has also an arterial origin. You know that endarteritis of the very small arteries, called *arterio-sclerosis* or "capillary-fibrosis arteritis," is an alteration of these vessels by which they lose a part of their elasticity and contractility by fibrous degeneration. There is an irritation that is propagated to the surrounding connective tissue, and it is just in the same way that you must understand interstitial nephritis, and even sclerosis *en plaques*. There is an alteration of the artery first which is propagated to the nervous system, so that the lesion of the capillaries ends by destroying the nerves. Well, in the kidney it is much the same; we have small lumpy bodies and the disease runs from the periphery to the center, while in the other form of kidney disease the contrary takes place. The anomaly here is an increased secretion of urine. The fact is that the irritation is propagated from without inward, and as long as the tortuous tubes are intact they work on, and you have polyuria; but the urine is of bad quality, and does not contain much urea. Finally, there is an atrophy of the tubes and the glomerulus only remains at work, and the urine gets less and less abundant; the patient then has serumuria, and often symptoms of uræmia. You can understand that this form of nephritis is seen often in gouty people, in arterio-sclerosis, and in lead-poisoning. There is, finally, another degeneration, known as amyloid, that has also a vascular origin, that you will see sometimes in cases of prolonged suppuration in scrofulous subjects and in Pott's disease.

Serumuria, then, is the blood serum in the urine. By our usual reagents we see albumin, but in doing so we only see a part of what is lost, which is really serum with all its nutritious properties; but what I want to show you in taking this review of serumuria and the kidney troubles is the important part that the vessels play in such difficulties. Now what are the conclusions to be drawn from these facts? Well, for the amyloid kidney we can do but little, as the whole organism would have to be modified. For the endarteritic trouble we can do good by giving iodide of potassium, and, as I said before, by using revulsion; milk, too, is useful, but do not suppose that an *exclusive* milk diet will be of value. Most of these patients are already of a certain age, many are old, and their stomachs will not tolerate milk alone; you will find that they will vomit it, or else they will have diarrhœa or constipation and other digestive troubles. I advise, therefore, that you give small doses only of milk, four to five cups at most during twenty-four hours, with other light food. And as to iodide of potassium, it is only well supported when given in the amount of a gramme a day; if you push it to four or five grammes you will find that it will be badly supported in such cases, and do no good, but in small doses it can and does do much good. Such is the intelligent and effective therapeutic action you should take in kidney troubles. I should like here to mention two curious patients who prove my theory that

kidney troubles have their ætiology in vascular difficulties. They are two ladies, who are well educated and capable of judging of their sensations, and they both have persistent albumin in the urine, which came from a pregnancy dating now some eighteen months ago, in both cases. They have been much improved by treatment, and so well do they know that the albumin is not only diminished, but also made to disappear entirely for a time, that they ask to have the cautery points applied over the kidney whenever they feel a curious symptom; this is a *pulsation over the renal region*; the beating of the renal artery is felt over the lumbar region in both these cases when there is a fluxion of the kidney, and at once the urine is diminished in quantity and albumin is found.

What does this prove? Simply that the sphincter of the efferent artery of the glomerulus is contracted and the renal artery beats. Revulsion causes this to cease and the urine to increase and the albumin to diminish. A very curious fact in regard to one of these ladies is that the pulsation was first felt after a violent fit of anger; so you see the part that even emotion plays in the renal function through the great sympathetic nerve. Fear, you know, also produces the same effects. The same patient two years ago was in imminent danger of death from an accident, and at once she had vertigo, vomiting, etc., while her urine fell to 250 grammes. I felt sure that there was a contraction of the renal vessels, and ordered first revulsion, but, that not acting as quickly as I liked, I applied the continuous current for twenty minutes at a time every day for a week, and the urine returned to its normal quantity.

The practical conclusion from all this is: every time you see a woman who complains of pulsation over the lumbar region, think of the glomerulus and bear in mind that it may be prevented from carrying on the renal function. Examine the urine always in pregnancy, in all the infectious diseases, scarlatina, etc.; if albumin is present, the important indication is to diminish the congestion of the renal vessels by the means of procuring revulsion that I have already mentioned, or others that you will learn of by experience, and you will then be doing what is rational and efficacious, and do real and permanent good, as is the physician's duty.

Original Communications.

THE ÆTIOLOGY OF CHRONIC OOPHORITIS: ITS RELATION TO TAIT'S OPERATION; WITH THE REPORT OF TWO SUCCESSFUL OPERATIONS.*

By ARCHIBALD McLAREN, M. D.,

ST. PAUL, MINN.,

ADJUNCT PROFESSOR OF GYNÆCOLOGY IN THE MINNESOTA STATE UNIVERSITY.

THE propriety of Tait's operation, so called, in certain chronic inflammatory diseases of the ovary and Fallopian tube, is so well established on sound surgical principles that it is entirely unnecessary for me to enter upon a discussion of the operation as a justifiable surgical procedure.

* Read before the Minnesota State Medical Society, June 21, 1888.

Like many other operations, it has been subjected to severe criticism, when the fault lay in the operator and not in the operation. Either it has been improperly performed, or patients have been operated upon who received no benefit, or who might have been relieved by a less radical course of treatment. But this does not disprove the fact that a certain number of women would be consigned to a life of misery and chronic invalidism, perhaps insanity, if not relieved by this same operation.

I have purposely confined this paper to Tait's operation for the relief of oophoritis, leaving out the various inflammatory diseases of the tubes which also call for this operation, for two reasons: First, that I might economize your time. Second, that I might emphasize the fact that in a large number of cases the chronic oophoritis was the permanent injury remaining after a salpingitis, the patient having recovered from the inflammation of the tubes, but with the ovaries hopelessly crippled.

It seems probable that some of the unjustifiable operations of the past may be accounted for by the chaotic state of our knowledge on the subject of the ætiology of acute and chronic oophoritis.

Uterine Diseases.—The writer of one of our best modern text-books says "chronic oophoritis is often a complication of uterine disease, and often results from prolapse." As this sentence occurs under the heading "*Ætiology of Chronic Oophoritis*," we must infer that the meaning of this first clause is that the uterine disease is the cause of the complicating oophoritis. To say the least, this is a very loose and indefinite statement. The only uterine disease which can produce either acute or chronic oophoritis is septic endometritis. The second clause of the foregoing sentence, "and often results from prolapse," is also a mistake, and again confounds cause and effect. When an ovary becomes inflamed, congested, and increased in size, as is always the result in acute inflammation, which is also the first stage of chronic inflammation, it usually becomes prolapsed from its own weight, dragging upon and stretching the ovarian ligaments; but to say that the prolapse of itself can produce either acute or chronic oophoritis is certainly a flight of imagination.

Cold and Violence.—Catching cold, external violence, blows upon the abdominal wall, and falls are all given as causes of oophoritis by different authors. That any of these causes can produce oophoritis is very doubtful—so doubtful indeed that, in looking for the cause of an ovarian inflammation in any given case, we may safely lay them all aside.

Fevers.—The exanthemata, typhus and typhoid fevers, and rheumatic fevers are given as causes of chronic oophoritis. Probably oophoritis is sometimes so produced, but I am sure that the number of cases must be very limited. In my short experience I have never seen such a case, and I find but very few reported cases.

Cellulitis.—Pelvic cellulitis and pelvic peritonitis are usually combined in the same case. Taking it for granted that a certain inflammation was originally cellular, then the broad ligament will be the seat of a secondary inflammation, usually an adhesive peritonitis. In such a case the peritoneal coat of the ovary will usually become inflamed,

and we shall have an acute oophoritis. Such an ovarian inflammation usually clears up with the abatement of the acute stage of the cellulitis, but occasionally ovarian adhesions, combined with the physiological activity of the ovary, carry the inflammation on into a chronic oophoritis.

Peritonitis.—Peritonitis, if general, will produce an inflammation of the peritoneal coat of the ovary. The oophoritis is then but a part of the general disease. As a rule, peritonitis is either an accompaniment or, more properly, a symptom of the oophoritis. The poison which causes the oophoritis also produces the peritonitis.

Septic Endometritis.—Under this head and starting from this cause will be found the great majority of all cases of oophoritis. In nearly every case we shall be able to find, by close questioning, that the first symptoms of oophoritis were preceded by a metritis, and that this was caused by the passage of a dirty sound, the use of tents, a dirty surgical operation, a gonorrhœal infection, or a puerperal septic poisoning.

When septic matter passes through the uterus, follows the mucous membrane lining the Fallopian tubes, and enters the peritoneal cavity, there is set up a peritonitis, either local or general, depending on the amount and intensity of the septic poison so discharged. When the inflammation becomes general, the case will probably end fatally if the peritoneal cavity is not immediately opened, washed out, and drained like any abscess cavity.

If the poisoning is less in amount, adhesions will form and shut off the inflammation from the general peritoneal cavity; there will then result a pelvic abscess or an abscess of the ovary. If the discharge of pus from the tube takes place at or near the menstrual epoch, when the fimbriæ of the tube are adherent to the surface of the ovary, or in the intermenstrual period if the pus passes on to the ovary, the inflammation will then particularly attack this organ, and as a result we shall have either an abscess or an inflammation of the ovary.

In Delafield and Prudden's "*Hand-book of Pathological Anatomy and Histology*," of 1885, we find the following under the head of Oophoritis: "Inflammation of the ovaries occurs most frequently in the puerperal condition, either as part of a general peritonitis or as a primary affection." "Inflammation of the ovaries unconnected with the puerperal condition is not common, but it may occur in connection with acute or chronic peritonitis, or perimetritis."

From these statements we see that oophoritis is found post mortem in the great majority of cases after a puerperal septic poisoning. My observation has led me to fear child-bed fever in women who have suffered or are suffering at the time of delivery from gonorrhœa, and the question occurs to me in this connection if a certain number of puerperal inflammations of the endometrium, tube, ovary, and peritonæum are not due to gonorrhœa which may have lain dormant as a gleet, a chronic gonorrhœa, or a leucorrhœa which is lighted up afresh by the confinement and easily passes to the peritonæum through the now patulous Fallopian tubes.

Gonorrhœa.—Aside from the puerperal period the greatest number of cases of oophoritis follow a gonorrhœal poi-

soning. Nearly all recent authorities are agreed upon this point, in so far as it affects acute gonorrhœa. But the position of Noeggerath—that septic metritis, salpingitis, peritonitis, and oophoritis may follow a latent or chronic gonorrhœa—is not so universally accepted.

As in all other septic inflammations, we see cases of gonorrhœa of different degrees of intensity. One man suffers from the severest form of acute gonorrhœal poisoning, while another man with his first clap has little or no inflammation; they are due to the same poisoning—in fact, may have been contracted from the same woman, the connections having taken place the same day. This is especially true of gonorrhœa in women. The acute stage of the inflammation may attract little or no attention and the woman go on to have a chronic gonorrhœal inflammation, which is passed over as a leucorrhœa or as an endometritis. Let me state a case in point which came under observation a few months since:

Mr. M. contracted gonorrhœa from an illicit intercourse; before he was aware that he had the disease he had connection with his wife and she contracted the disease from him. His attack was of the severest type; hers was very mild indeed. The mucous membrane of the vulva and vagina was hardly inflamed at all. A mild leucorrhœa and a slight attack of urethritis were the only symptoms which led her to ask for advice. Despite active treatment, she went on to a septic endometritis and afterward to a pelvic inflammation of a very severe character, and to-day, several months since her first attack, she is still suffering from chronic gonorrhœal inflammation of both tube and ovary on the left side.

Reviewing the ætiology of chronic oophoritis, we find that the majority of all cases follow puerperal septic poisoning, and that nearly all the remaining cases are produced by a gonorrhœa.

A word as to the diagnosis and prognosis of chronic oophoritis in reference to Tait's operation. The symptoms are not diagnostic, because oophoritis is produced by and therefore combined with other surrounding inflammations, such as cellulitis, salpingitis, etc. The only true diagnostic points are the physical signs which we get from the bimanual examination.

When the ovary is rolled between the left index finger in the vaginal vault and the right hand pressed deeply into the anterior wall, we shall find that the ovary is somewhat enlarged, that it is very tender, and we shall produce the sickening pain which is truly characteristic. Painful defecation, painful and profuse menstruation, and dyspareunia are all diagnostic symptoms to be well considered in making a diagnosis.

The prognosis of a chronic oophoritis is not good. Many cases are undoubtedly cured by long courses of local combined with general treatment. The surest cure follows a pregnancy. I have now under my care a young lady who contracted gonorrhœal oophoritis during the first six months of her married life, her husband having had a stricture and a slight gleet discharge when married. She was under the care of one of the most eminent surgeons in the East for nearly a year; he advised a Tait's operation, to which she would not consent. At the end of a year the ovarian ten-

derness was so much improved that she returned to her husband. The ovary was still large, very tender on pressure, and lying prolapsed in Douglas's *cul-de-sac*. She soon became pregnant, her husband's gleet having been cured. One year ago she was delivered, and to-day she is entirely cured of her oophoritis. The ovaries are now of normal size and lie out of harm's way at their normal level.

All cases of chronic oophoritis, even though they can not be cured, do not necessarily call for Tait's operation. The severity of the symptoms and the effect of the disease upon the patient's nervous system must be the points to guide us in advising our patients.

In conclusion, let me briefly give the histories of two cases of chronic oophoritis in which the urgency of the symptoms led me to perform Tait's operation:

CASE I. *Chronic Oophoritis following Puerperal Poisoning.*—Mrs. N., aged thirty-six, mother of six children, last confinement in November, 1886, when she miscarried at the fourth month. This, her only miscarriage, was followed by a slight attack of childbed fever. Rise in temperature and pulse. Lochia light-colored and quite offensive, with pain particularly referred to the right side. Mrs. N. was confined to her bed for six weeks and never again regained her health, nor was she able to leave the house until after her operation, performed some eight months after her miscarriage.

In December, 1886, one month after the miscarriage, her condition was as follows: Menses profuse, occurring at least every three weeks; duration six days. Pain before and after the flow. Suffers from very severe headaches, with intense soreness of the scalp. Is sleepless and excessively nervous, making it necessary to send her children away from home.

Examination shows bilateral laceration of cervix, with erosion of os. Uterus retroverted; left ovary prolapsed, enlarged, and very tender.

After months of persistent and careful local treatment, keeping her confined to her bed for the greater part of the time, with no relief from either her local pains or her general nervous debility, Tait's operation was advised and eagerly accepted.

On August 19, 1887, assisted by Dr. Stone, Dr. Wheaton, Dr. Spencer, and Dr. Wells, I removed both ovaries and tubes. Incision two inches and a half long. The left ovary was found adherent in Douglas's *cul-de-sac*, of about the size of a hen's egg, containing several small cysts. The fimbriæ of the left tube were adherent to the surface of the ovary. The right ovary was small and cirrhotic.

Silk ligatures which had been boiled in 1-to-500 bichloride solution were used for the pedicles; a continuous stitch of juniper-oil catgut was used to sew up the peritoneal wound, and three silver stitches were taken through the skin and muscles; 1-to-2,000 bichloride solution was used on the sponges and hands. The instruments had been first washed in 1-to-30 carbolic-acid solution, and then passed through the flame of a spirit lamp. I prepared my own sponges, first soaking them in dilute hydrochloric acid and then washing in running water, and finally in a 1-to-500 bichloride solution, in which they were kept until used.

The patient's temperature never went above 100.5° F., and this was on the eve of the second day. The pulse was never above 110. On and after the third day, temperature below 100°. The urine was drawn but twice during her whole convalescence, and but three quarter-grain suppositories of morphine were used during the same time. The bowels were moved on the third day by enema.

Ten months after the operation: On June 1, 1888, patient reports herself as being better than at any time since the birth of her first child. Walks for miles without pain, and can now perform all her household duties—not light by any means.

Has menstruated once since the operation. The uterus is in normal position. No tenderness or thickening, and her sexual life is now perfectly normal.

CASE II. *Chronic Oophoritis following Gonorrhœa.*—Mrs. R., aged twenty-nine, first seen in January, 1888. Married seven years; one child three years old; pregnant but once.

During the first week of married life Mrs. R. commenced having pain and heat in the external genitals, painful and frequent micturition, and a creamy-white purulent discharge. Was confined to her bed. She had a severe attack of pelvic peritonitis. She soon entered Dr. Emmet's private hospital in New York. He told her that she had pelvic cellulitis and peritonitis, which she would probably never entirely get over. The inflammation of the bladder and urethra soon necessitated the opening of the bladder and permanent drainage, and local applications to the inflamed viscera.

Mrs. R. lived irregularly with her husband for four years, when she was divorced, intercourse having become too painful for her to submit longer. The brother of Mrs. R. tells me that Mr. R. had a stricture and a gleet discharge before marriage. He was told by his physician that there would be no danger in his being married.

Examination shows the right ovary large, exquisitely tender, and prolapsed. Uterus retroflexed.

Mrs. R. is a confirmed invalid, and spends over nine months of every year in bed. Suffers from the most severe pain in the side and back, especially at the menstrual period. Sleepless and excessively nervous; can not walk or sit without aggravating her pain. General and local treatment gave her no relief, and after five months of fruitless work I advised a Tait's operation.

May 9, 1888.—Assisted by Dr. Wheaton, Dr. Epley, and Dr. Wells, I removed both ovaries and tubes. Peritoneal wound two inches long. Cavity opened fifteen minutes.

Right ovary adherent to the posterior fold of the broad ligament, which was rolled over upon it. Ovary considerably enlarged, and of about the size of a small hen's egg. The stroma was congested and the seat of a fibrous hypertrophy. The left ovary was small and cirrhotic.

On the morning of the second day the temperature reached 100°. It immediately dropped, and on the morning of the third day was normal, and continued normal until the 9th.

Mrs. R. passed her own water. Was moved in bed from one side to the other, and I moved her bowels on the third day by a calomel purge, followed by a saline cathartic.

It is too soon to predict what the result of the operation will be as to her ultimate recovery, but I think she will soon be a well woman. This is certain: that she, like others of her class, can now thank God and Tait that there is a hope of deliverance from that life-long horror—chronic invalidism.

NOTE.—July 20th.—Mrs. R. is now up and about, is perfectly well of her former trouble, and, as she expresses it, is "better than at any time since marriage."

VARICOCELE IN THE FEMALE: WHAT IS ITS INFLUENCE UPON THE OVARY?

By A. PALMER DUDLEY, M. D.,

SURGEON IN CHARGE, ST. ELIZABETH'S HOSPITAL.

(Concluded from page 149.)

CASE I.—Mrs. P., aged forty, married twelve years. One labor (instrumental); three abortions (produced). No history of

menorrhagia or metrorrhagia. Some leucorrhœa. No vesical symptoms. Bowels very constipated. For the preceding ten years she had suffered from pain in the left side, increased by standing or walking. This pain was also felt in the back near the kidney. She had been treated by various physicians for spinal irritation, nervous prostration, etc., and in 1881 underwent an operation for lacerated cervix by Dr. Mann, of Buffalo (then of Hartford). For twenty months previous to my seeing her she had been able to sit up only about three hours each day, and to take a few steps across the room with assistance. She was brought to St. Elizabeth's Hospital on May 4, 1887, when I made my first examination of her. Digital touch showed the perinæum in good condition, the vagina about normal, the uterus in proper position, the cervix small and showing evidence of having been sutured. The endometrium appeared to be healthy. The broad ligaments were thickened and tender, while the ovary lay somewhat prolapsed behind the left one. Not being satisfied with an examination *per vaginam*, I made a careful rectal examination of the ligaments, and then discovered that, besides the prolapsed ovary on the left side, both ligaments contained a large cluster of dilated tortuous veins, giving just the same feel to the finger as that given by a varix in the scrotum. I advised laparotomy for her relief, believing I could tie the veins off and cure her, and I put her upon preparatory treatment for one week. On May 10, 1887, I did abdominal section and removed the ovaries and tubes, together with a large varix in each ligament, the left one the largest, the veins being nearly as large as my little finger. The tubes were not diseased, but both ovaries were atrophied and dotted with small cysts. The patient made a good recovery, her pain was relieved from the time of the operation, and four weeks later she left the hospital to return to her home. Fourteen months after the operation she writes that she is perfectly well and free from pain.

CASE II.—Mrs. B., aged fifty-one, married thirty-three years. Had borne four children. No miscarriages. Last child born ten years and a half ago; labor rapid. She had never been well since, suffering all the time from pain in the left side. Never had had metrorrhagia, but had suffered from menorrhagia during the last two years of menstrual life. Menopause two years ago. Leucorrhœa to some extent. No vesical symptoms. Bowels much constipated. She had received treatment during the previous eleven years from sixteen different physicians without benefit, many diagnoses being made. She had been in bed most of the time for the past eleven years, and for the past three years had only got up to use the commode at the bedside. Her principal complaint during this time had been of pain at about the lower edge of the spleen, from there shooting down into the left groin. Careful physical examination of the abdomen by palpation, percussion, and auscultation showed nothing abnormal, except a prominent pulsation of the abdominal aorta (a diagnosis of aneurysm of the abdominal aorta had been made by one physician). Vaginal examination showed the uterus thrown back somewhat and fixed in its position, about normal in size, although the menses had ceased for nearly two years. There also seemed to be an enlargement to the left of the uterus in the broad ligament. Careful rectal examination showed the enlargement to be a mass of blood-vessels, and beneath it a strong pulsation of the uterine artery could be plainly felt. I made a diagnosis of varicocele, and advised the patient to come to New York for operation. She was brought to the city upon a bed, October 7, 1887. I at once put her upon preparatory treatment of milk diet, vaseline baths, etc.

On October 11th, in the presence of Dr. Smith, her family physician, and my assistants, I put her under the influence of an anæsthetic and made an incision, four inches in length, through the linea alba, sufficiently large to allow of the intro-

duction of my hand and wrist. I carefully examined all the abdominal organs before touching the pelvic cavity. Nothing pathological was found in the region where the pain was complained of. There were no adhesions about the spleen or intestines in that region. The spleen was small, the stomach normal, the transverse colon low, and the aorta normal, except that it bifurcated high up (behind the navel), and at the point of bifurcation the pulsation was prominent. Tracing the descending colon down, I found it bound to the left ovary and tube to the extent of an inch. The ovary and tube were atrophied, and the uterus was somewhat retroverted and adherent. Beneath the ovary and tube on the left side was the bunch of knotted varicose veins that I had previously diagnosed by rectal touch. All adhesions about the parts were broken up, and as much of the ligament as could be drawn up, at the same time that gentle traction downward was made upon the ovarian vein. (From the extreme emaciation of the patient most of the ligament could be brought into view.) It was then quilted with the cobbler's stitch, commencing at the outer extremity, near the pelvic brim, and including all the ovarian vein that I dared to draw down. As I neared the uterine extremity of the ligament I passed the stitches deeper, quilting close to the pelvic floor, and in the last two stitches I included the round ligament so as to be able to remove about an inch and a half of it. The ovary and tube, together with the varicose veins, were then cut away. On the right side the vessels were not so large, but I wished to correct the displacement if possible at the same time, so I treated the right broad ligament in the same manner. The result of such a pronounced shortening of both broad ligaments can be readily understood. When I let go of the pedicles the tension upon the round ligaments at once sprang the uterus into a position of anteversion, where it remained at the time she left the hospital, nine weeks later. She never had a day's pain after the operation, and her after-treatment was simply with good diet and a nerve tonic of dilute phosphoric acid and strychnine in calisaya elixir. Her recovery was slow but steady, and when leaving the hospital she walked down two flights of stairs and out to the carriage. A letter from her daughter, received July 25, 1888, says that she is perfectly well, rises at 7 A. M., never thinks of lying down during the day, and goes to bed at 10 P. M. to sleep well all night.

I have reported this case somewhat at length owing to the fact that the patient had been bedridden for such a long time, and after the operation has returned to such perfect health.

CASE III.—Mrs. L., aged fifty-three, married twenty-six years, entered the hospital January 24th. Menses first appeared at fifteen, regular but scanty, with pain in the sides and back. She had given birth to three children, the first by instrumental delivery. Had one miscarriage, between the first and second child; the last child born thirteen years ago. No history of metrorrhagia, menorrhagia, or leucorrhœa, but had had frequent and painful micturition. Locomotion painful. *Bowels much constipated*. General health poor. She had passed the menopause a year and a half. Had never had local treatment. Her symptoms at the time of entering the hospital were severe pain in the back and pain of a sharp, stinging character down through the left side and limbs, also pain in the stomach (dyspeptic). Her last confinement had been followed by some form of inflammation in the pelvis which confined her to bed twelve weeks. She gave no evidence of heart, lung, or kidney disease, except that the urine showed some phosphates, evidence that the kidneys were laboring. She was put upon the use of a strictly milk diet for ten days, and the urine then examined

with a better result, the phosphates having disappeared. Digital examination showed the uterus small; also a small, tender thickening behind each broad ligament; the broad ligaments were thickened, boggy, and very tender to the touch. A rectal examination was made with the same result as in the two previous cases, except that the ovaries seemed somewhat enlarged. On February 9, 1888, I did laparotomy, and quilted both broad ligaments and removed all that I could of them; cleansed the abdominal cavity thoroughly and closed the wound. She made a good recovery. There is nothing in the after-treatment of her case worthy of mention. She left the hospital five weeks after the operation, relieved of the pain through her back and hips, but still suffering somewhat from the dyspepsia.

Note.—July 26, 1888.—To my personal knowledge she is now well and doing her own work.

This was the third case in which I had made a diagnosis of varicocele in the broad ligament, and done laparotomy for its removal. It was the most obscure of the three, the varix being the smallest, and on that account I determined to have a careful microscopical examination of the specimen made, to either confirm or invalidate my diagnosis. I gave the specimen for examination to Professor Porter, of the Post-graduate School, who had sections of it mounted and drawings made from them for me. The following is his report in full:

Pampinocoe.—Upon microscopical examination of the ovaries, tubes, and broad ligaments removed by Dr. Dudley, the following conditions were found:

First, the ovaries were slightly enlarged and the seat of a few small cysts, some of which were filled with a clear serum and others with a semi-gelatinous substance. The stroma of the ovary was composed of ordinary white fibrillated connective-tissue substance (Fig. 1, *a*), smooth muscular fibers, and blood-

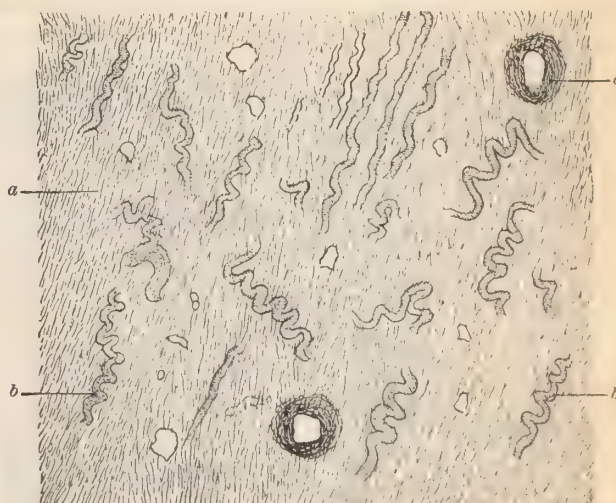


FIG. 1.—*a*, ovarian tissue; *b*, *b*, blood-vessels; *c*, an arteriole.

vessels. The walls of the arterioles and small arteries in the stroma were generally thickened (Fig. 1, *b*); in some the lumen was diminished, while in others it was expanded. This condition would naturally disturb the nutritive supply to the gland, and tend to produce a capillary engorgement.

Second, the Fallopian tube presented no special abnormality.

Third, the most marked pathological changes were found in the substance of the broad ligament, the pampiniform plex-

uses, and their tributaries. The pampiniform plexus was in a state of marked congestion, the walls of the vessels were thickened, and their course was unusually tortuous. That this engorgement was of long duration is sustained by the condition of the capillaries, which were found, upon microscopical examination, to be enormously distended and filled with blood in a state of partial pigmentary degeneration (Fig. 2, *b*), indicating



FIG. 2.—*a*, fibrous tissue of the broad ligament; *b*, dilated blood-vessel filled with blood-cells; *d*, convoluted blood-vessel; *e*, an arteriole.

considerable duration of the stasis. Under ordinary circumstances the capillaries collapse and can not be distinguished from the fibrillated connective tissue in which they are imbedded, unless an artificial injection is made, or they are distended by blood as the result of an acute or chronic congestion. Had the congestion been acute in character the capillaries would have been distended with red and white corpuscles, which could be

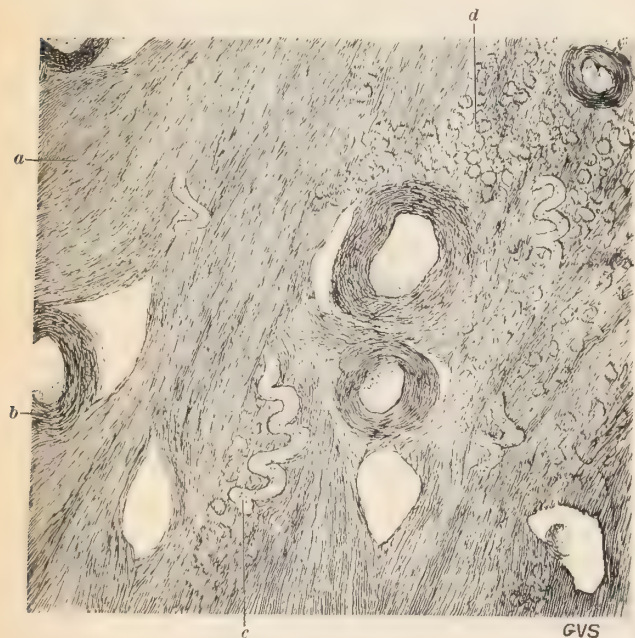


FIG. 3.—*a*, fibrous tissue; *b*, ligament, longitudinal cut; *c*, convoluted blood-vessel; *d*, fibrous tissue cut transversely to the axes of the fibers.

readily recognized as such. But in this case it was difficult to make out the corpuscles, but the vessels were very much distended by the blood-pigment matter, showing clearly that the engorgement was of long duration or chronic in nature.

The walls of all the veins were thickened and their course was quite tortuous, as we commonly see in varicose conditions (Fig. 2, *d*). The walls of the arteries were very much thickened; in some the lumen was contracted (Fig. 2, *e*), in others it was expanded (Fig. 3, *b*). This condition would naturally cause an irregular pressure to be maintained in the capillaries, and act as an element in producing the capillary engorgement (Fig. 3, *c*), which, together with the chronic congestion of the veins, explains the stagnation and pigmentary degeneration in the capillaries. The sections were made by Dr. Crowell, and the drawings made from them by Dr. George G. Van Schaick represent very accurately the great capillary congestion and thickening of the blood-vessels.

[Signed] WILLIAM H. PORTER, M. D.

CASE IV.—Mrs. D., aged fifty, married thirty-two years, four children, one miscarriage. Matured at fifteen; regular, flow normal. All labors normal. Had suffered from profuse leucorrhœa and obstinate constipation. Locomotion painful. Menopause one year previous to my seeing her. Had been under the care of three different physicians for local treatment during the past two years. Complained of constant pain in the left side and back and across the abdomen. When she lay in bed this pain would at once disappear; half an hour after her taking the erect position it would reappear in the same spot. She had suffered so much that she was ready to do anything for its relief. I saw her first at my office, April 5, 1888. Examination showed thickening and tenderness on the left side only. The urinary analysis revealed some pus cells, but no albumin or casts. She was put upon the use of a strictly milk diet, with directions to drink freely of distilled water as well. These directions she faithfully carried out. She entered the hospital April 15th, when the urine was again examined, with negative results, with respect to albumin and casts, but there were still some pus cells. No evidence of cystitis existed, and the small number of pus cells was accounted for by the presence of some large crystals of oxalate of lime. I hesitated about giving her an anæsthetic under such circumstances, but afterward decided to do so, and on April 20th did the operation and removed the varix from the left broad ligament. Digital touch along the ureter to the kidney did not reveal any abnormality, still, on the fourth day after the operation, the pus cells in the urine began to increase until quite a number were present, and yet no pain or irritation about the bladder attended their presence; neither was there elevation of temperature or pulse, both having become normal, on the second day after the operation. The wound healed kindly and she returned to her home in sixteen days, with directions to watch the condition of her kidneys.

Note.—A letter from her, dated July 27, 1888, states that she has gained flesh, and has no pain through the back, but that the urine still contains some pus.

I do not consider this case an entire success, but the points of interest in it are the character of the pain caused by standing, the fact that it was entirely relieved by lying down, and the rapid increase of pus in the urine after the administration of an anæsthetic, its appearance being unattended by elevation of temperature or pulse.

My paper is already much longer than I intended, and the subject too great for me to attempt to touch upon all the conditions which may bear relation to it, but before summing up there is one point to which I wish to draw attention.

At the reading of this paper I raised the question as to what the influence of varicocele might be upon the ovary.

Then I had not received the report of the result of Professor Porter's examination of the specimens, and could only reason from analogy, believing that if a varicocele in the scrotum would in time produce atrophy and loss of function in the testicle (which is a well-known fact), the same condition of constant increased blood-pressure in the venous circulation of the ovary must necessarily produce analogous changes in that organ, which would cause a train of symptoms such as I have endeavored to describe and have demonstrated by operative measures to actually exist; and the result of the microscopical examination by Dr. Porter confirms the opinion I then held, while the drawings made from the mounted specimens are positive evidence of the changes which had taken place. Hence, to sum up—

1. It is my belief that varicocele in the broad ligament is not a rare condition.

2. That it is produced by long-continued congestion; arrest of uterine involution, from whatever cause, and chronic constipation being the most important factors in its production.

3. That it may exist and be mistaken for so-called cellulitis or salpingitis unless careful rectal examination of the broad ligament is made.

4. That it will produce changes in the structure and function of the ovary similar to those produced in the testicle, causing atrophy of its stroma, and interference with the proper development of the ova to such an extent as to produce cystic degeneration of it and consequent sterility.

5. That when the varicocele has existed for some time, or for a sufficient length of time to have caused a permanent dilatation of the veins, local treatment by counter-irritation (with Churchill's tincture of iodine), cotton tamponing, pessary support, or local depletion will be of no permanent benefit.

6. That the result of a radical operation for its removal in the four cases reported, although not sufficient to make the operation a justifiable one in all cases, is strong evidence in its favor, even though the woman has passed the menopause.

THE ACCIDENTS INCIDENTAL TO THE USE OF THE EXPLORING NEEDLE FOR DIAGNOSIS.*

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THE object of this paper, in response to the request of your president, is to present some facts to form the basis of a discussion regarding the grave accidents and secondary septic complications that sometimes follow the use of the exploring needle for diagnostic purposes. My own attention was particularly directed to the subject recently by a case of pneumothorax followed by sudden death, produced apparently by an exploratory puncture with a hypodermic needle. This case was reported to this society in December.

I wish to say in advance that I would not be under-

stood as in any way protesting against the use of the exploring needle for diagnosis in properly selected cases with necessary precaution, nor as suggesting that in the vast majority of cases there is any considerable danger attending its use; but I would protest against the routine indiscriminate and careless puncture of everything normal and abnormal upon insufficient grounds, when other signs and symptoms, and especially the physical examination, give more reliable information. The impression has arisen in the minds of a large number of the profession that this procedure is absolutely free from any danger, however performed and under whatever conditions resorted to. This is especially the case among hospital men. A member of the house staff of one of the large city hospitals recently said to me, in speaking of the nature of a pulsating tumor of the chest: "I know it is an aneurysm because I introduced a hypodermic needle into it and moved it around in all directions, thus proving it was a large cavity, and then withdrew a syringe of blood." That in this case portions of stratified fibrin from the aneurysmal wall were not separated and set free as emboli was not the fault of the operator. So general is the belief in the absolutely harmless nature of this operation among the younger physicians that I believe few would think of ascribing to it any accidents occurring after its use, however close the relation to the operation.

I wish in these remarks to simply call attention to the fact that serious results do sometimes unquestionably follow the use of an exploring needle, and to report a few of the accidents that have occurred from its use.

I have made no attempt to collect a large series of cases or go carefully into the literature, scanty as it may be, as this was not necessary for my purpose, but have been content with a few cases illustrating the different kinds of accidents and secondary complications following puncture of different parts of the body with an exploring needle.

These may be divided into three classes:

1. Those accidents resulting directly or indirectly from the traumatism produced by the needle.

2. Those cases of septic infection produced by the inoculation of healthy tissues during the withdrawal of the needle through them after introduction into more deeply seated infectious matter.

3. Those cases of septic infection produced by the introduction of needles not properly disinfected into healthy or diseased tissues or fluids.

Under the first head, the accidents following from the traumatism produced by the puncture, the following cases should be recorded:

Cases of Pneumothorax.—The first case of this kind that came under the writer's notice was reported to this society in December.

In that case a patient came under observation for some pulmonary affection, and the physician in charge introduced a hypodermic needle into both sides of the chest. From the right side he obtained two or three drops of pus and blood. From the left nothing was obtained. The following morning the patient was found dead in bed. The autopsy revealed the presence of a very extensive interstitial pneumonitis with tubercular

* Read before the New York Clinical Society, February 25, 1888.

deposits in the left lung. The lung was very much contracted and occupied not more than half the space ordinarily filled by the normal lung. The heart was drawn to the left of the median line. The right pleural cavity was exceedingly large and was filled with air. The right lung was collapsed and compressed against the spinal column and contained scarcely any air. There were no adhesions between the two layers of the pleura, and there was no fluid of any kind in the pleural cavity. The lung was very carefully removed and inflated. Then, after placing it under water, an exceedingly small pin-hole perforation was found in the lower lobe near the free border. There were a few small tubercular nodules scattered through the lung, and extensive emphysematous changes. The tissues around the puncture seemed to be normal with the exception of a slight hæmorrhage at the point of puncture and the emphysematous condition found elsewhere. I believe that this perforation and the subsequent pneumothorax were due to the puncture of an emphysematous vesicle that, as was shown by the drops of pus, was situated over more deeply seated diseased tissue. The puncture remained patent and the pneumothorax followed. This interpretation, of course, is not susceptible to proof.

Dr. G. F. Lloyd, of the Flatbush Hospital, Brooklyn, has given me the history of the following case, which was apparently one of the same nature:

The patient was a Hungarian laborer, aged forty-one, and was admitted to the hospital with the following history: He fell on the ice a day or two before admission, and struck the right side of his chest against a curb-stone. On admission, the diagnosis was made of simple pleurisy with effusion, situated on the right side. There were ecchymoses in the skin over this side where he had struck against the stone. His temperature was 101.5° F. and his pulse 80. The patient did not seem to be very sick. A day or two after his admission a hypodermic needle was introduced into the right side and then into the left side. Serum was obtained from the right side. The left side appeared to be normal, and nothing was withdrawn through the needle. Four hours later the physician was called to see the patient because of severe dyspnœa. On examining the chest he found the intercostal spaces on the left side bulging, with tympanitic resonance over the whole side. Stimulation by hypodermic injections and by the stomach was resorted to without avail, and the patient died half an hour later with symptoms of intense dyspnœa and cyanosis. No autopsy could be obtained.

It seems to me that there is no way of accounting for the symptoms and signs in this case except by assuming the presence of pneumothorax. This followed immediately after puncture of the lung with a hypodermic needle in a man suffering apparently only from a simple pleurisy on the opposite side. The needle used was an ordinary hypodermic needle.

Dr. Thacher reported a similar case at the December meeting of this society. The history of his case was as follows:

"A child had some infectious disease, some pulmonary symptoms developed, and, in order to settle the diagnosis between broncho-pneumonia and pleurisy, the hypodermic needle was inserted on both sides. Within two or three hours intense dyspnœa developed, and the child soon died. The speaker made an autopsy. Both lungs were collapsed, and a puncture was found through the lower edge of both at the site where the physician said he had introduced the hypodermic needle. There was a slight amount of broncho-pneumonia. The speaker could account for the pneumothorax in no other way than on

the supposition of puncture of the lungs by the hypodermic needle."

These cases of pneumothorax, it seems to me, are of special interest. So far as I know, attention has not been previously called to the occurrence of this condition after the use of an exploring needle. It probably would never follow the introduction of a needle into a perfectly normal lung. The conditions under which it would, perhaps, be most likely to occur are when the pleura is quite normal and the lung is diseased, and especially when there is a process of softening in the lung near the pleural surface, but not involving it.

It seems to me probable that there are cases of pneumothorax of less extent due to this cause, which do not produce symptoms marked enough to attract attention, and that there are other cases which are recognized, and in which recovery takes place, that may also be produced in this manner. A moderate degree of pneumothorax, existing on one side and gradually developed, would not be likely to produce very urgent symptoms, and, as the opening would probably be soon closed as the lung became partially collapsed and the air in the pleural cavity absorbed, the condition might easily escape recognition, and, if recognized, soon disappear. In all the cases reported above, where death occurred, it will be noticed that both lungs were involved and rendered practically useless.

I have obtained the notes of a number of cases of general peritonitis produced by oozing along the track of the needle after puncture of a distended gall-bladder. The first one was reported by Dr. A. B. Pope. The case occurred in the service of Dr. Ball in Bellevue Hospital:

A fluctuating tumor was found in the region of the gall-bladder, which was supposed to be a distended gall-bladder. A hypodermic needle was introduced, and immediately after its withdrawal the patient complained of intense pain in the abdomen. He said to the physician, "You have done me up this time, doctor." He died in three days of general peritonitis. At the autopsy, bile was found mingled with the peritoneal exudation.

Dr. Wylie, in the "Trans. of the New York Obstet. Society," March 2, 1886, described a similar case. Dr. Roosevelt reported a third case at the December meeting of the Clinical Society, and Dr. Janeway has given me notes of a fourth case of the same kind that he saw in consultation in private practice.

Dr. Wylie has also reported a case of fatal peritonitis produced by oozing of pus along the track of the needle in a case of perityphlitic abscess. A hypodermic needle was used for the puncture. Dr. Mundé has reported, in the "Trans. of the New York Obstet. Soc.," a case of suppurating dermoid cyst which he punctured with a hypodermic needle after opening the abdominal cavity, and on withdrawing the needle a drop of pus escaped. If this had been punctured through the abdominal wall, death would have certainly followed from general peritonitis. It illustrates well the mode of occurrence of such accidents. Cases of peritonitis have also been reported as following puncture of pyosalpinx and encysted pockets of pus in the abdominal cavity.

Gerster ("Aseptic and Antiseptic Surgery," p. 247) has reported a case in which death occurred from general peritonitis after puncture of a perityphlitic abscess, the needle having passed through the peritonæum.

The "Medical News" for January 1st contains the report of a case of sudden death following the introduction of an aspirator needle occurring in the practice of Dr. J. C. Reeve, of Dayton, Ohio.

The patient was suffering from abscess of the liver and it was decided to aspirate the liver. Immediately after the introduction of the needle the patient suddenly began to breathe heavily, and in a moment was dead. No anæsthetic was used. There was nothing found at the autopsy to account for the sudden death.

A German surgeon, whose name I have forgotten, has recently reported a case of removal of a large pancreatic cyst in which, previous to the removal, an exploring needle was introduced into the cyst for diagnostic purposes. A general peritonitis, lasting about a week, immediately followed, although the patient recovered, and the cyst was later removed.

Dr. Janeway has given me notes of the following case:

In a patient with suspected pericarditis with effusion an exploratory puncture of the pericardium was made by the physician in charge. The patient died soon after, and at the autopsy laceration of the heart was found, with hæmorrhage into the pericardium.

In the "Australian Medical Gazette" of June, 1887, a series of cases are reported where unfortunate results followed puncture of hydatid cysts. These are given with the report of a case in which symptoms of collapse terminating fatally followed immediately upon puncture of a hydatid cyst of the spleen. Only a few drops of fluid had escaped, when the patient went into collapse and died. Among the cases included in this paper are the following:

In the "St. Bartholomew's Hospital Reports," vol. xvi, the following case is reported:

A small hydatid cyst of the liver was punctured with a very fine trocar. Only a few drops of fluid escaped, when the patient died suddenly with the symptoms of shock.

In the "Lancet," vol. xxi, the following case was reported:

A very fine trocar was introduced into a hydatid cyst of the liver, and a few drops of fluid escaped, when the patient went into collapse and died in twenty minutes.

A number of cases are on record of death following puncture of hydatid cysts of the lungs. In most of these death has followed from escape of fluid into the lung and drowning; in others, as in the foregoing, collapse and death have directly followed the puncture.

Dr. Tingley, of the house staff of Bellevue Hospital, has given me notes of the following case:

A hypodermic needle was introduced into a large ovarian cyst; the following day the cyst was removed by operation, when a thin layer of colloid matter was found at the site of puncture between the abdominal wall and the cyst wall. Had not an operation been performed early, peritonitis would probably have followed.

Not properly belonging here, perhaps, is a case of continued oozing following puncture of an ovarian cyst with the aspirator needle reported by Dr. Lusk.

A case of circumscribed pleurisy following breaking of a hypodermic needle in the chest wall is also reported by Dr. Tingley.

Dr. A. A. Smith has called attention to the occurrence of cough with bloody sputum for several days after exploratory puncture of the lung, and Dr. F. S. Dennis has referred to a case of continued oozing from an aneurysm after puncture with a hypodermic needle.

It is possible that some of the cases included in this class properly belong in the second class.

The second class includes those secondary septic complications following the inoculation of healthy tissues in the withdrawal of the needle after its introduction into more deeply seated infectious material.

A case was reported at the December meeting of the Clinical Society by Dr. Roosevelt:

When, in the exploration of the chest in a case of empyema, the needle was introduced into the peritoneal cavity, through the diaphragm, and into the pleural cavity, a general peritonitis followed the exploration, probably produced by the infection of the peritoneal cavity by material remaining on the needle in its withdrawal, or perhaps by oozing along the needle track.

Dr. Janeway has referred to two cases of cellulitis of the back that had fallen under his observation which followed the introduction of an exploring needle into the lung in cases of fœtid bronchitis:

The cellulitis was of the gangrenous type, accompanied by subcutaneous emphysema, and was probably produced by the infection of the tissues with the material from the bronchiectatic cavities remaining on the needle when it was withdrawn.

An instance of mild septic infection of a similar nature has fallen under my observation.

In a case of encysted peritonitis attended with little rise of temperature the introduction of an exploring needle was followed by a chill and a temperature of 104° that continued for several days. A similar case is reported by Dr. Tingley. Following the introduction of a needle into a perinephritic abscess the temperature ran up to 106°. The infection in these cases may also have been produced by oozing along the track of the needle.

The third class includes the cases of infection of normal or diseased tissues or collections of fluid by inoculation of them with a septic needle. These cases occur most frequently, and are those most generally recognized and most easily avoided. But little requires to be said about them. There are but few clinicians of considerable experience who have not had the misfortune to see one or more cases of simple pleurisy changing into suppurative pleurisy after puncturing with a hypodermic needle. Several such cases have fallen under my own observation. I do not refer, of course, to those cases that become suppurative after aspiration, but to those that become suppurative after simple exploratory puncture. In some of these cases certainly, if not in all, the occurrence is not a mere coincidence, but is due to the infection of the serous fluid by a septic needle.

Similar cases of suppurative peritonitis following the introduction of a needle into the abdominal cavity in peritonitis have been observed. Dr. Lusk has reported two cases of suppuration in ovarian cysts following the introduction of an aspirating needle.

A similar result would be likely to result from this procedure under the same conditions in any form of cystic neoplasm or retention cyst, or in cases of collection of serous fluid in any pre-existing cavities. The occurrence of suppuration under such conditions is simply a question of inoculation of the tissues or fluids with septic organisms.

Reference should be made to the dangers and accidents following puncture of intestines distended with gas or liquid contents. There are numerous cases recorded where a general peritonitis has resulted from the oozing of faecal matter through the wounds thus produced.

I especially desire not to seem to exaggerate the dangers following the use of the exploring needle or to overestimate their importance. The following remarks, however, are suggested and seem to be justified by the cases reported:

1. The employment of the exploring needle is not infrequently attended by considerable danger, and a number of deaths have directly resulted from its use.
2. The indiscriminate, careless, and routine resort to exploration with a needle should be condemned. This procedure should not be resorted to without careful consideration of the conditions obtaining in each case and the results that may follow the puncture. The site for the puncture should be thoughtfully chosen, the puncture carefully made with complete antiseptic precautions, and the smallest needle that will answer the purpose employed.
3. The puncture of collections of fluids with tense walls in relation with serous surfaces should be, as far as possible, avoided, and, if it is resorted to, sufficient fluid should be withdrawn to relieve the tension upon the walls of the sac. In many cases certainly an exploratory operation would be attended by less danger.
4. In the introduction of the needle into deeply seated infectious matter the nature of the intervening tissue should be carefully considered.
5. The needle before use should be always thoroughly disinfected, preferably by heating in the flame of an alcohol lamp or a Bunsen burner.
6. The skin where the puncture is to be made should be rendered thoroughly aseptic by first scrubbing with soap and water and then washing with an antiseptic solution.
7. The dangers attending the use of this valuable adjunct in diagnosis should not in the slightest interfere with its employment in properly selected cases, where due precautions are observed as to its use.

SOME REMARKS REGARDING THE TREATMENT OF CHOLERA INFANTUM.

By WILLARD PARKER BEACH, M. D.,

BROOKLYN.

EX-HOUSE PHYSICIAN TO INFANTS' HOSPITAL, RANDALL'S ISLAND, N. Y.

PROBABLY there are no diseases known among physicians which are so fatal in their results and common in our

midst as the various derangements of the gastro-intestinal tract of the infant, especially during the hot summer months. In view of the importance of this very common disease, I have thought it proper to offer a few suggestions regarding its management, which, if not original, may at least tend to revive in the mind of the busy practitioner some details of value which have escaped his memory.

Having been called to a case of "cholera infantum," so called, in the great majority of instances it is wise to administer a purgative dose of castor-oil, 3 j. At the same time a poultice of ground flax-seed, containing two tablespoonfuls of ground mustard, should be applied over the entire abdomen; it should be thick and warm. After remaining sufficiently long to redden the skin very markedly, it may be removed, and from four to six layers of flannel wound about the bowels, which flannel may be removed by degrees after recovery. It may be necessary to apply the poultice more than once. Very strict injunctions should be made against handling or tossing the child. He should be kept as still as possible, not held, but allowed to lie on a hard bed, in as cool a place as can be found. His pillow should be made of some hard material, preferably of the "excelsior filling," which does not retain heat well. His clothing should be of the lightest texture, and very limited in amount. It is well to keep the baby out of doors as long as the sun is up, but to avoid night air with care.

From the first it will be helpful to give some alcoholic; probably brandy, in doses of half a drachm every hour, is the best, this dose being modified according to the depression.

As for medication, I have found the following formula to work well in very many cases:

R Tinct. opii camph., { āā 3 iij;
Bismuthi subnit., }
Ext. ipecac. fl. 3 ss.;
Tinct. krameriae 3 ss.;
Aquæ q. s. ad 3 ij.

M. Sig.: One drachm every two, three, or four hours.

This prescription is to be used after the action of the castor-oil only. Usually the child will suffer from great thirst, and possibly barley-water, taken *ad libitum*, will satisfy him in this particular better than anything. Should there be much nausea or vomiting, oxalate of cerium, in one-grain doses, will usually control it. Regarding alimentation, we should take everything from the list which is digested in the intestine. The best food is made from beef, mutton, or chicken, in the shape of broths, care being taken to skim all the fat from the surface, or the various meat extracts may be used—such as Cibil's, Liebig's, or Valentine's. These meat preparations should constitute the entire food during the active inflammatory stage. Sometimes the child can digest the tenderloin of a porter-house steak, chopped into very small pieces, or the juice of a much underdone steak may be given, but nothing sweet or of a starchy nature, as most artificial foods are. In my experience, milk does not answer so well as the broths, although occasionally a small quantity of egg-nog containing an alkali does seem to digest remarkably well.

If vomiting is a marked element in the case, it has

been my custom to resort to rectal alimentation, with most excellent results. I usually employ a mixture of brandy, milk, and egg, or one of the above-mentioned broths, and put nothing into the stomach as food. I am firmly convinced that many physicians do not appreciate the value of rectal alimentation in these various intestinal disorders in infants.

After convalescence has commenced, and, indeed, often during the severity of the attack, a patient will improve wonderfully if removed to a country, mountainous region. Sea air does not seem so helpful as that of the mountains. The foregoing suggestions are offered for a child one year old, and must be modified accordingly.

I would add that even in breast-fed children the animal broths have seemed to work better than mother's milk in many instances.

The three points on which I would lay special stress are :

1. The administration of foods digested by the stomach absolutely.
2. That the child be kept away from the warm body of the mother, however much it may cry, and be allowed to lie on a hard surface in absolute quiet.
3. Rectal nourishment.

128 CAMBRIDGE PLACE.

FOREIGN BODIES IN THE EXTERNAL AUDITORY CANAL.

By CHARLES W. KOLLOCK, M. D.,
CHARLESTON, S. C.

THE tolerance and intolerance of the ear to foreign bodies are frequently demonstrated, and, while some bodies, especially insects, cause the greatest agony, those of a different nature may remain in the ear for long periods without apparently causing discomfort. A remarkable case of foreign bodies in the external auditory canal has recently been under my care.

Mrs. D. consulted me for deafness, which was profound, as only the loudest tones with the mouth close to her ears could be heard. My prognosis was unfavorable, but at her request I made an examination of the better ear, and saw there a lump of hardened wax. This was with some difficulty removed, but its removal made little or no difference in the hearing. As the mass was removed it became somewhat disintegrated, and two objects resembling seeds were seen in it. Of this I said nothing, but intended asking my patient, after finishing the examination, for an explanation. In the mean time she happened to see the mass, and immediately exclaimed: "Are those seeds?" I replied that they were. Whereupon she said: "They have been in my ear for *forty years*." She said that when nine years old she had poked two apple-seeds into her left ear, which her mother had tried to remove, but had not succeeded. She had never experienced any trouble, and supposed that long ere this they had worked their way out. The seeds were encapsulated by the wax until it became softened by syringing, and when first seen by me were perfect in shape, but when placed in water soon softened and disintegrated. The canal was apparently unaffected by their presence, and the deafness in no way connected with it, as hearing was worse in the other ear, and evidently the trouble was labyrinthine.

THE NEW YORK MEDICAL JOURNAL, *A Weekly Review of Medicine.*

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 18, 1888.

THREE QUARTERS OF A SCIENCE.

THE numerical method of arriving at generalizations seems to exercise a fascination over many minds, and it has often been employed in attempts to throw light on obscure questions. It is not perfectly convincing to everybody, notwithstanding the general impunity with which its adherents exploit the dictum "figures can not lie"; otherwise Louis would now be regarded as among the greatest of the philosophers that ever turned their attention to things medical. Some interesting applications of the method are to be found in a paper read by Dr. J. R. Uhler, of Baltimore, before the Baltimore Academy of Medicine on the 5th of June, published in the "Maryland Medical Journal."

Somewhat in Louis's vein, Dr. Uhler declares that, if he were writing a treatise on the practice of medicine or surgery, he would place at the head of the chapter on each disease a list of the symptoms of that disease, with the idea that, in the diagnosis of any supposed case of the disease in question, the practitioner should ascertain how many of them were present, and use that number as the numerator and the number of those in the list as the denominator of a fraction that would express his approach to certainty in the diagnosis. For example, he would make a list of six symptoms of inflammation; if five of them were found to be present in a given instance, the physician would be "five sixths sure" that he was dealing with a case of inflammation. Dr. Uhler's six symptoms of inflammation are redness, heat, pain, swelling, interference with nutrition, and interference with function. Now there is hardly one of these phenomena that is not uniformly absent in some forms of inflammation. In a case of suspected iritis, for instance, the examiner might fail to detect either redness, heat, or swelling, in which event, according to the rule here laid down, he could not be more than half certain of the diagnosis. We fancy that some ophthalmologists would repudiate such a conclusion. It will be observed that our author makes no attempt to assign greater significance to one symptom than to another; if we accept his view, the absence of so-called pathognomonic symptoms no more vitiates a diagnosis than the absence of a like number of other symptoms of comparatively trivial import. It is to be feared that the application of the numerical test would not constitute much of an advance in the art of diagnosis.

This matter, however, Dr. Uhler touches upon only incidentally; the main part of his communication consists of a novel exemplification of one of the uses to which the numerical method may be put—nothing less than a scheme for expressing the degree in which what we term the science of

medicine approaches exactness. To this end the author divides medicine into nine branches, in each of which, as he thinks, the proportion of positive facts to current statements may be expressed numerically. He admits that anatomy and chemistry are "all true"—that is to say, as we understand him, that all the statements made in recognized text-books on those subjects represent demonstrated facts. In this we think he is somewhat overcredulous. He puts down six eighths of physiology as true, five twenty-fourths of practical medicine, one third of pharmacology, and ten twelfths of surgery and obstetrics. It is not perfectly clear what fractions he would assign to the other branches, and it is to be observed that in the practical branches he does not appear to discriminate between matters of doctrine and matters of practice. Reducing all his fractions to a common denominator and adding them together, he finds that the proportion of demonstrable truth to current assertion in medicine as a whole is as 153 to 216—that is, medicine is $\frac{153}{216}$, or a little less than three quarters, of an exact science. He goes into some details concerning the considerations that led him to assign the various fractions, frankly indicating that his deductions are only meant to be taken as approximate.

It must be acknowledged that this is a graphic and original way of stating one's impressions, and, whatever may be its shortcomings, we trust that it may conduce to the commendable end that the author had in view in the preparation of his paper, which is entitled "Positive Medicine," namely, to induce medical writers to confine themselves to facts. This, to be sure, is what they generally try to do; the trouble lies in the difficulty of distinguishing facts from illusions.

MINOR PARAGRAPHS.

SPINAL MANIFESTATIONS OF GONORRHOEA.

M. HAYEM and M. Parmentier have lately contributed an article to the "Revue de médecine," an abstract of which appears in the "Gazette hebdomadaire de médecine et de chirurgie," in which they describe certain affections of the spinal cord as directly due to gonorrhœa. The authors have endeavored to extend the range of certain observations made by preceding writers in France and England, and to add to their precision. It seems that in a few persons suffering with gonorrhœa such spinal phenomena are met with as a zone of pain, fulgurant pains in the lower limbs, double sciatica, hyperæsthesia, exaggeration of the patellar reflex, epileptoid trepidation, enfeebled motility, and atrophy of the muscles of the legs and thighs. Ordinarily these phenomena appear in company with articular affections, and, with them, show periods of exacerbation and of amelioration. The time of their onset seems to bear no definite relation to that of the beginning of the gonorrhœa. They may be grouped in three classes: disorders of sensibility, those of motility, and those of both sensibility and motility. The manifestations are always confined to the lower limbs, and the spinal lesion is generally a congestion or a meningo-myelitis affecting the posterior or the postero-lateral columns of the cord.

A NEW SPECIAL JOURNAL.

An illustration of the extent of the tendency to divide medicine into specialties, at least as regards its literature, is shown

in the appearance in Paris of a journal of hypodermic medication, of medical antiseptic by means of subcutaneous injections. We have not yet seen the new journal, but its title is given in "Progrès médical" as "La médecine hypodermique, antiseptie médicale au moyen des injections sous-cutanées."

CAMP HYGIENE.

AN excellent little manual of hygiene for the use of medical officers of the National Guard of the State of Pennsylvania has been prepared by the Committee on Preventable Diseases of the State Board of Health, and issued in the form of a pamphlet. The need of some such guide is a real one, and it is to be hoped that the militia organizations of various States will be furnished with something of the sort. In the State of New York an equivalent is to be found in the instructions and suggestions drawn up by the Surgeon-General, Dr. Bryant, to which we have before called attention.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 14, 1888:

DISEASES.	Week ending Aug. 7.		Week ending Aug. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	34	12	16	4
Scarlet fever.....	81	18	69	12
Cerebro-spinal meningitis....	2	2	3	4
Measles.....	157	17	144	10
Diphtheria.....	106	28	102	27
Small-pox.....	0	0	2	0

The Health of New York City.—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, August 14th: Typhus, one case; typhoid fever, 113 cases and 36 deaths; scarlet fever, 377 cases and 66 deaths; cerebro-spinal meningitis, 9 cases and 10 deaths; measles, 709 cases and 59 deaths; diphtheria, 411 cases and 124 deaths; small-pox, 11 cases.

The New York Post-graduate Medical School and Hospital.—During the winter session of 1887-'88 over three hundred and thirty-five different physicians attended the courses of instruction, an increase of more than sixty per cent. over last year. In the hospital department about four hundred operations were performed, all of major importance. To all of these the matriculates had access. This remarkable increase in the matriculation list has rendered increased clinical space and hospital accommodations necessary, so that a new clinical amphitheatre has been built, and will be used for the first time at the opening of the winter session, September 17, 1888. A new and commodious laboratory also has been built and furnished with the latest apparatus for the study of normal and pathological tissues. The nose and throat clinical room has also been enlarged.

Army Intelligence.—Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 12 to August 18, 1888:

LAUDERDALE, J. V., Major and Surgeon. July 28th promoted to surgeon, with rank of major, to rank from July 3, 1888.

MASON, CHARLES F., First Lieutenant and Assistant Surgeon. Re-appointed July 28, 1888, to rank from July 2, 1888. Reported for duty at Fort Washakie, Wyoming, August 2, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 11, 1888:*

WHITAKER, H. W., Passed Assistant Surgeon. Detached from the Mohican and to proceed home and wait orders.

Society Meetings for the Coming Week:

MONDAY, August 20th: Hartford, Conn., City Medical Association.

TUESDAY, August 21st: Ogdensburg, N. Y., Medical Association.

WEDNESDAY, August 22d: Medical Society of the County of Albany, N. Y.

OBITUARY NOTES.

John Miller, M. D., of Andover, N. J., died on Wednesday, the 8th inst., at the age of seventy-two years. The deceased was a graduate of the College of Physicians and Surgeons, of New York, of the class of 1846.

John F. Dunphy, M. D., a graduate of the Georgetown Medical College, of the class of 1873, who had for several years practiced medicine in New York, died on Sunday, the 12th inst. Dr. Dunphy was a member of the Medical Society of the County of New York and of the Medico-legal Society.

Henry Raphael, M. D., died suddenly at Saratoga on Sunday, the 5th inst., in the forty-eighth year of his age. He was graduated from Bellevue Hospital Medical College in 1862, and for several years had been attending physician to the Bellevue Hospital Out-patient Department, in the class of diseases of the genito-urinary organs and syphilis, and to the Eastern Dispensary, in the class of diseases of children. In 1869 he translated Vogel's work on "Diseases of Children," and in 1886, von Zeissl's work on the "Pathology and Treatment of Syphilis," to both of which works he added numerous editorial notes. He was a member of the Medical Society of the County of New York. His death was probably due to heart disease, from which he was known to have suffered for several years.

Letters to the Editor.

THE SAMBUCUS NIGRA AS AN ANTIPARASITIC.

CHARLESTON, W. VA., August 8, 1888.

To the Editor of the New York Medical Journal:

SIR: I wish to call your attention to the unique treatment of a case by an ex-member of the State Board of Health, Dr. L. Carr, of our city. He, with several of us, call occasionally to see Dr. Watkins, of our city, who is entirely helpless, and who, by the way, is the oldest living graduate in the State of West Virginia. The nurses whom we employ failed to keep the old gentleman as clean as they should have done, consequently the larvæ of the fly made their appearance in considerable numbers, for which the ex-member ordered the patient washed in elder-juice for their extermination. Now, what I wish to ask of you is, to explain the peculiar action of this new antiparasitic. I acknowledge that it is entirely new to me, but, as it comes from an ex-State officer, it is highly probable that the promulgation of it may do the profession at large much good.

F. S. THOMAS.

** In Stillé and Maisch's "National Dispensatory," edition of 1886, on page 1332, our contributor will find mention made of the use of the elder for the destruction of maggots.

Proceedings of Societies.

ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

Fourth Meeting.

The President, Dr. W. H. BAKER, of Boston, in the Chair.

(Continued from page 78.)

Varicocele in the Female: What is its Influence upon the Ovary?—This was the title of a paper read by Dr. A. PALMER DUDLEY, of New York (see pages 147 and 174).

Dr. HOWARD KELLY, of Philadelphia, said that this was a subject in which he had been interested for some time. He had published something on it within the last two weeks. In several cases of laparotomy he had found a distorted, distended condition of the veins on the left side. At that time he had not known what significance to attribute to them. About eight months ago he had operated in a case of very severe pelvic pain, in which he thought that by bimanual palpation he felt ovarian enlargement. He found large veins, and a number of tributary veins moderately enlarged. On thinking about the matter, he had come to the conclusion that a large number of cases which found their way to the surgeon, because of pelvic disease, apparently affecting the tubes and ovaries, were of that kind. He thought that in many instances he had felt by bimanual palpation a fullness in the left broad ligament giving a sensation like that of cellular tissue high up, almost beyond reach. Patients of this class seemed to have a peculiar expression of countenance, indicative of a pain of peculiar character. The expression was not that of a person suffering from pain due to localized pus formation, in which there was a peculiar color of the skin, with a peculiar character of the pulse and febrile exacerbations. As to the cause, he thought the anatomical feature in the veins alluded to by the author had much to do with it, as had also constipation. Correcting constipation alone, however, had not cured the disease. Subinvolution was one cause if not a frequent one. There was scarcely any class of patients seen by the gynecologist whose condition required more careful study than that in which the tubes and ovaries had often been removed to relieve severe suffering, although they were apparently not diseased, and he thought the condition described by the author would throw much light on many such cases.

Dr. C. P. TUCKER, of New York, had under treatment at present a woman who had formerly been in the Woman's Hospital, where he had first seen her. She then suffered from pain in the left side, and on examination it was thought that the condition might be one of small cyst of the left ovary. An abdominal section was made, but the operator could find nothing at all abnormal on the left side, while on the right side the ovary seemed to be somewhat diseased and was removed. The patient continued to suffer as much after the operation as before, the pain being still confined to the region of the left ovary. The same mass was present, apparently in the left broad ligament, and, when he had spoken of it to Dr. Dudley, they had both thought it might be a varix.

Dr. MOSELEY had for some time recognized this condition, which he believed to be a varicose state of the veins of the broad ligament. He had especially noticed it in connection with anterior displacements of the uterus. He had for some time thought about ligating the vessels.

Dr. T. A. EMMET had not heard the paper read, but, having listened to the discussion, thought the same subject had to some extent been considered in his own paper.

Dr. DUDLEY regretted, since he had heard the reading of

Dr. Emmet's paper and listened to the discussion thereon, that more of the gentlemen had not been present to hear what had been said on varicocele in the female, as it had a bearing upon the substance of Dr. Emmet's paper. He thought one of the causes of the form of inflammation discussed by Dr. Emmet and others to-day was rupture of the dilated veins which constituted varicocele in the female. Dr. Emmet's paper had led so well up to the subject treated of in his own paper that he wished he had gone further and told whether he had cured varicocele by the method of treatment described. The patients whom the speaker had operated upon had previously gone through the course of treatment described by Dr. Emmet in the hands of skilled men; lacerations of the cervix had been repaired, the hot-water treatment had been carried out faithfully, one patient had been kept in bed a year, the other most of the time for eleven years, still the varicocele was found on opening the abdomen. His two cases were evidence that such general treatment would not cure, although it might relieve. There were, he thought, many cases which, when taken in time, were cured by hot water, etc., but one could not look into the pelvis to confirm that opinion. When, however, the veins had become distended and formed a knotted mass, and, as Ziegler had said, the opposing walls had become absorbed from close contact, leaving sinuses, he thought the tampon, and even hot-water injections long continued, would not cure the patient. The difficulty in such cases had extended too far up, out of the reach of the tampon and hot water. That was the class of cases to which he had desired to call attention. He had also wished to bring forward a method of treatment of such varicose condition of the broad ligament without sacrificing the tube and ovary. Everybody present had seen the tubes and ovaries removed in cases in which the microscopist could discover in them nothing abnormal, or at least nothing which, aside from the symptoms, would apparently justify their removal. Apropos of such cases, he had asked in his paper what the effect of the varicocele described would be upon the tubes and ovaries. In both of the cases related he had found the ovaries atrophied. It was true, one patient had passed the menopause, but the other patient had not, yet the ovary was atrophied. There were no adhesions. In certain cases treatment which required the intelligent aid of the patient in carrying it out could not be employed, and one had to seek for measures which could be employed by the physician alone. The use of the pessary in these cases could only be of temporary benefit unless, indeed, the patient was willing to wear it during the remainder of her life. Dr. Emmet had spoken of the relief afforded by an operation upon the cervix uteri. Dr. Dudley had found that such an operation did temporarily cut off part of the circulation to that organ, allowed the veins to rest and to contract, and in that way proved of benefit. One of his patients had had that operation performed, and she had for a time been improved, but as soon as she assumed the erect position her difficulty was renewed. In neither of his cases had there been sufficient displacement or prolapsus of the uterus to be worthy of attention. In neither had there been adhesion or distortion of the broad ligament to cause the sufferings. The patients had been relieved only by removal of the varicocele. Yet he had not raised the question of other forms of treatment. He had opened the abdomen, and, finding the condition mentioned, been obliged either to go ahead and remove it or leave the patient to suffer as she had done for so long a time. The cases suggested a possible means of cure for a class of patients in whom heretofore the symptoms had been so severe as to require some radical treatment, and, as no other plain course lay before him, the surgeon had removed the ovaries and tubes, even when those organs were apparently but little, if at all, diseased.

Book Notices.

The Throat and its Diseases, including the Nose and Ear. With One Hundred and Twenty Illustrations in Color and Two Hundred Engravings designed and executed by the Author, LENNOX BROWNE, F. R. C. S. E., Senior Surgeon to the Central London Throat and Ear Hospital, etc. Second edition, re-written and enlarged. Philadelphia: Lea Brothers & Co., 1887. Pp. xviii-614. [Price, \$6.]

THE first edition of Mr. Browne's work appeared in 1878. The second edition includes much that is new and interesting. The first chapter treats of the anatomy and physiology of the throat and nose, and the second deals with the methods employed in the examination of the upper respiratory tract. The chapter on therapeutics is clear and concise and furnished with numerous well-executed illustrations. Laryngological literature has made such rapid strides during the past decade that it would be beyond reason to expect to find every well-known author's views embodied in a book of this size, but it is only fair to say that this one contains a satisfactory *résumé* of the more important work that has been done in the special branch of practice to which it relates. The recital of original cases and the accompanying illustrative drawings do much to emphasize certain facts, and also serve to bring out the author's individuality and place the reader face to face as it were with the cases. The author is not in accord with some writers as to the dangers of amygdalotomy, but advocates the operation when it is indicated, instead of the employment of caustics and other uncertain measures. The chapter on aural affections associated with pharyngeal disease is very opportune, as the connection between diseases of the ear, the nose, and the throat is daily becoming more clearly established and appreciated. The work is practical and largely original. The colored illustrations and the formulæ add decidedly to its value.

The Relation of Alimentation and Disease. By J. H. SALISBURY, A. M., M. D., LL. D., etc. New York: J. H. Vail & Co., 1888. Pp. xi-332.

THE name of Dr. Salisbury is doubtless familiar to many of our older readers in connection with his discovery of the "*Palmella gemiasma*," the "*Crypta syphilitica*," the stramineous origin of measles, and sundry other cryptogamic marvels which a perverse generation of bacteriologists has refused to accept, notwithstanding his positive assurance of certitude. In the present work he further extends the scope of his inventive genius, and lays before a skeptical profession and a confiding public an announcement which he has waited twenty years to make, and the rest of the world twenty centuries to hear—namely, that of the true causation of all diseases and that of an infallible method for their cure.

Starting with the postulate that "we have twenty meat teeth and only twelve vegetable teeth" (a somewhat arbitrary classification as regards the bicusps), and that therefore two thirds of our diet should consist of lean meat, the author finds in the alcoholic and acetic fermentation of amylaceous and saccharine foods the *fons et origo* of chronic diarrhœa (which he considers as synonymous with "consumption of the bowels"), fibroid or tubercular pulmonary phthisis, uterine myomata, ovarian cysts, locomotor ataxia, Bright's disease, glycosuria, cancerous growths, paralytic affections, in fact, all maladies except those arising from poisons, parasites, or injuries. Ergo, the therapy appropriate to all these various disorders resolves itself into an almost exclusive regimen of "the muscle pulp of lean beef made into cakes and broiled," with the adjunct of

washing out the accumulations of "yeast" from the stomach by means of draughts of from half a pint to a pint of hot water before each meal and on going to bed. In order to restore vital energy to the nervous system, a sort of self-mesmerism is recommended: The palm of the right hand and the fore part of the body being both "positive magnetic poles," while the left palm and the back part of the body are negative, it is evident that placing the right hand on the forehead and the left on the occiput, and subsequently (after exactly forty-nine respirations) moving them to the pit of the stomach, the umbilicus, and their respective rearward opposites, must send "a vital current back into the body," causing "the physical and mental systems to become passive, contented, and comfortable."

It will be seen that this remarkable treatise comprises in itself an entirely new and rather startling series of propositions relating to physiology, pathogeny, histology, and bio-chemistry, quite at variance with the views traditionally entertained and obstinately taught by contemporary writers and lecturers; and, while we confess our inability to discuss seriously the numerous questions involved until the author has published a detailed cyclopædia of the medical sciences, we fear that, even with such explanatory aid, another twenty years, if not another score of centuries, will elapse before his opinions gain general acceptance, or his work is adopted as a text-book in schools of medicine.

Partial Syllabic Lists of the Clinical Morphologies of the Blood, Sputum, Faeces, Skin, Urine, Vomitus, Foods, including Potable Waters, Ice and the Air, and the Clothing (after Salisbury). By EPHRAIM CUTTER, M.D., LL.D., etc. New York: Published by the Author, 1888. Pp. xviii-81. [Price, \$1.]

THIS opusculum is avowedly a sort of tender to the more ponderous engine of Dr. Salisbury, whom the author has long admired and followed as "the master discoverer and explorer," and is little more than a catalogue of the microscopic objects described in every text-book, with the addition of the cryptogamia named by Dr. Salisbury, and the omission of all the schizophytes which are attracting modern attention. The yellow-fever cryptococcus of Freire is admitted as a "monumental" contribution to pathology, but the tubercle bacillus has no recognition; perhaps because, like his master, the author is able to detect by microscopic examination of the blood "consumption of the lungs before there is any lesion of them," and, by the use of lean beef and hot water, to arrest the nascent disease before it has developed sufficiently for the birth of bacilli, or for detection by ordinary diagnostic means. Although the lists may be acceptable to the author's pupils, for whom they are chiefly prepared, they are not likely to be much sought after by medical readers.

BOOKS AND PAMPHLETS RECEIVED.

On the Deleterious Results of a Narrow Prepuce and Preputial Adhesions. By Lewis A. Sayre, M.D., Professor of Orthopædic Surgery in Bellevue Hospital Medical College, New York. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

The Therapeutics of Diphtheria. By A. Jacobi, M.D., President of the New York Academy of Medicine. [Reprinted from the "Transactions of the Philadelphia County Medical Society."]

Comparative Studies of Mammalian Blood, with Special Reference to the Microscopical Diagnosis of Blood Stains in Criminal Cases. By Henry F. Formad, B.M., M.D., etc., Philadelphia. With Sixteen Illustrations from Photo-micrographs and Drawings. [Reprinted from the "Journal of Comparative Medicine and Surgery."]

Cornell University College of Agriculture. Bulletin of the Agricultural Experiment Station. II. August, 1888. Printed by the University, Ithaca, N. Y., 1888.

Fermented Milk. By E. F. Brush, M.D., Mount Vernon, N. Y. [Reprinted from the "Archives of Pædiatrics."]

A Report of Some Cases of Abdominal Surgery. By J. M. Barton, M.D., Surgeon to the Jefferson Medical College Hospital, Philadelphia, etc. [Read before the Philadelphia County Medical Society, April 11, 1888.]

Twenty-third Annual Announcement and Catalogue of the Missouri Dental College, St. Louis. Session of 1888-'89.

Footprints of a Profession; or, Ethics in Materials and Methods. Address delivered before the Maine Dental Society, at their Twenty-second Annual Meeting, held in Waterville, July 19 and 20, 1887. By Horatio C. Meriam, D.M.D., Harvard University Dental School.

University of Toronto, Medical Faculty. Calendar. Session of 1888-'89.

Rectal Insufflation of Hydrogen Gas an Infallible Test in the Diagnosis of Visceral Injury of the Gastro-intestinal Canal in Penetrating Wounds of the Abdomen. By N. Senn, M.D., Ph.D., Attending Surgeon to the Milwaukee Hospital, etc. [Reprinted from the "Journal of the American Medical Association."]

Reports on the Progress of Medicine.

OTOLOGY.

By CHARLES STEDMAN BULL, M.D.

Carcinoma of the Ear, probably arising in the Tympanum or Mastoid Antrum.—Bacon and Muzzy ("Arch. of Otol.," xviii, 1) report an interesting case in a woman, aged fifty-six, who first noticed, a year previous to her coming to them for treatment, that she was deaf in the right ear. There was some tinnitus. A discharge of a watery nature made its appearance in March, 1887, and had continued ever since. In July, 1887, she noticed a swelling in front of the right ear, and the pain, which had occurred only at intervals, became constant. The swelling in front of the ear was followed by facial paralysis. The swelling and induration of the tissues extended upward and forward toward the orbit, and also downward toward the angle of the jaw. There was tenderness on pressure in front of the meatus, with a steady boring pain in front of the helix. On August 26th an exploratory incision half an inch long and an inch and a half deep was made just in front of the external meatus, but nothing was found. On October 1st, two bleeding vegetations were seen at the bottom of the external auditory canal. On November 2d, when Dr. Bacon first saw her, she could hear a loud voice with the right ear, and the tuning-fork, when placed on the vertex, was referred to the same ear. The tissues over the mastoid were indurated and there was some deep-seated pain on pressure. A Wilde's incision, an inch and a half long, was made, and denuded bone found, also an irregular opening leading to the mastoid cells. The ear and mastoid cells were syringed out several times a day, and morphine was given to relieve the pain. Subsequently the original incision was enlarged and extended upward to the upper border of the pinna and downward as far as the end of the lobule. The mastoid was found extensively diseased, and contained loose sequestra of bone. These and some spongy tissue were removed, and the cavity was scraped with a sharp spoon and thoroughly washed out with a solution of carbolic acid, and iodoform powder was insufflated. A slice of the indurated tissue from the mastoid region was examined, and proved to be carcinoma of the scirrhus variety. The induration around the ear steadily increased, extending upward two inches, forward two inches and a half, and downward two inches. The incision behind the ear gradually healed. The entire auricle except the helix and lobule became indurated. On February 22d the pinna became enormously swollen and black in color, and a large swelling existed on the neck, below the ear. The intense pain was now in the upper temporal region and the vertex. There was right hemiplegia, the speech was affected, and the mind wandered. The disease rapidly extended to the neck, and the patient died on March 24th.

Labyrinthine Disease in a Case of Leukæmia.—Steinbrügge (*ibid.*)

reports an interesting case in a young man aged twenty-six. He had been healthy up to the age of twenty, except for deafness in the left ear, resulting from purulent otitis media. For some years he had suffered from hoarseness, cough, dyspnoea, vertigo, headache, and palpitation of the heart. Then he began to suffer from epistaxis and vomiting, and his urine was often turbid. He was admitted into the hospital in Giessen in April, 1886. The liver and spleen were enormously enlarged and the inferior extremities oedematous. Both eyes showed papillitis with hæmorrhages. On December 25th great roaring in the head was complained of, followed by sudden deafness in the right ear. He died January 8, 1887. The autopsy showed suppurative bronchitis, emphysema of the lungs, dilatation of the heart and endocarditis, enormous enlargement of the spleen and liver, and parenchymatous nephritis. In the right labyrinth the two scalæ were filled with extravasated blood, and here and there were shining hyaline globules. The ductus cochlearis also showed extravasations, and the same granular masses were visible in the aqueduct as in the inferior convolutions. The membrane of the round window was considerably thickened and ossified. Extravasated blood was also found in the neurilemma of the nerves of the internal meatus and around the sacculi. The membranous semicircular canals were for the most part inclosed in neoplastic bone tissue.

A Bilateral Labyrinthine Affection during Cerebro-spinal Meningitis.—Steinbrügge (*ibid.*) publishes the notes of a case occurring in a boy of six years, who entered the hospital December 23, 1885, complaining of vomiting and headache for three previous days. He had been totally deaf for two days, and he remained so till his death, January 20, 1886. There were no convulsions, paralysis, or stiffness of the neck, and the temperature was usually normal. At the autopsy there was found leptomenigitis of the convexity and base of the brain. The right auditory nerve in the inner meatus was surrounded with pus and infiltrated. The facial nerve was partially surrounded with pus and loosened, and the nerve-fibers were swollen. The nerves of the vestibule, ramus, and sacculus were surrounded with pus. The modiolus was full of pus cells. Patches of inspissated pus were found above the organ of Corti. Corti's membrane was totally destroyed, the separate cellular tissues being reduced to a homogeneous mass. Neoplastic connective-tissue strands extended from Reissner's membrane to the wall of the scala vestibuli. Pus cells were found in the aqueductus cochleæ. The perilymphatic space in the vestibule was filled with neoplastic connective tissue and there were numerous hæmorrhagic extravasations. In the utriculus, the bony space of the inferior ampulla was full of neoplastic connective tissue. The bony semicircular canals were also filled with connective tissue, and the periosteum was almost entirely absent. On the left side the destruction was much more extensive, especially in the bony structures. New connective tissue extended from the scala vestibuli to the vestibular space corresponding to the sacculus, and from the scala tympani into the aqueductus cochleæ, completely closing it. A large amount of pus was found in both scalæ as far as the summit of the cochlea. All the bony parts showed incipient defects, which were very marked in the recessus hemisphæricus of the vestibule. The bony semicircular canals were partly empty, and partly filled with bony lamellæ and detritus.

Bacterial Invasion of the Inner Ear in the Course of Diphtheria.—Moos's article (*ibid.*) is long and interesting. The petrous bones, on which his observations were made, were laid in Müller's fluid. After inspection of the internal and middle ear, the pyramids were detached and decalcified with chromic acid. They were then washed out for several hours in running water, preserved in absolute alcohol, and imbedded in celloidin, and the sections were made in the usual manner. Each section was first laid in glycerin, and then examined. The transverse and longitudinal sections for bacterial examination were subjected to Gram's staining method. In the first case there was no diphtheria of the middle ear, but rather a secretory form of inflammation, and there was an inflammation, probably a beginning diphtheritic process, involving the membrana tympani, the mucous membrane of the tympanum, and the base of the long process of the incus. The second case showed primary catarrh of the middle ear complicated by diphtheria. The micro-organisms found in the labyrinth were round or oval, and often arranged like the beads on a rosary. The labyrinth and the pe-

trous bone, especially the pyramid, were invaded by streptococci—that is, by organisms that are only an accidental complication, and not specific in diphtheria. These bacilli were found everywhere in the medullary spaces of the pyramids of the petrous bones. They were also met with in the endolymphatic space of the semicircular canals in one case, as well as in the same space of the frontal ampulla, in a third case. The endolymphatic space of the semicircular canals of the same bone was completely filled with a metamorphosed proliferous mass, but no bacilli were found. Negative results were obtained on examination of the vestibule and cochlea in all the cases. Alterations in the cochlea existed in only one case, in which there was hæmorrhage into the first turn of the scala tympani, with an accumulation of lymph and large, round cells in the sulcus spiralis and ductus cochlearis. No bacteria were discovered in the defects in the acoustic nerve and its ramifications, but their presence was demonstrated in the aqueductus vestibuli and in the apertures of the proliferated and partially degenerated periosteum. The globar stasis of the blood-vessels noticed in different parts of the body was also found here, especially in the arteria auditiva interna. Consecutive hæmorrhages were traceable on one side as far as the periosteal region of the lamina spiralis ossea of the first turn of the cochlea, and on the other side as far as the cristæ of the vestibule. The Haversian canals and the periphery bounding the marrow spaces were the seat of cellular infiltration, with hyperplasia of the sheath of the medullary substance, while the latter was disintegrated and filled with the products of retrograde metamorphosis.

This series of changes in the labyrinth is undoubtedly traceable, at least in the beginning, to the influence of a pathogenetic micro-organism. There are, however, a number of infectious diseases besides diphtheria which are marked by the same assemblage of symptoms.

Fistulæ Fissurarum Branchialium, with Peculiar Malformation of the Tympanic Membranes.—Ole Bull (*ibid.*) reports a case of this kind in a young man whose hearing had always been absent. For several years there had been at intervals a discharge from one or the other ear. The left auricle was somewhat shorter and more concave than the right. On both sides, beginning at the helix, there was a depression like that left by a small pinhead. On each side, in the skin over the sternomastoid muscle, there were small openings, 60 to 65 millimetres from the lower margin of the auricle. A small probe could be introduced on both sides through the opening, to the depth of 5 millimetres. There was a slight viscid discharge from the openings. The drum-heads were defective, the membranæ flaccidæ being absent. The folds extending from the processus brevis mallei formed the anterior and upper boundaries of the drum. The handle of the malleus was much retracted. On inflation through the Eustachian tube the air was heard and felt in the ear of the physician. In syringing the ear the water could be made to issue from the corresponding nostril.

The Effects of Pressure by Polypi of the Tympanic Cavity.—Blake ("Ann. des mal. de l'oreille," etc., January, 1888) reports two cases of this kind, showing that a tumor of considerable size may exist in the middle ear with no other sign of its presence than the ordinary subjective and objective symptoms of polypi, together with a chronic purulent inflammation of the middle ear. In these two cases, however, there were grave general symptoms. In both cases the tumor was between the external wall of the tympanum and the incus, extending downward and causing a permanent pressure on the labyrinth through the medium of the oval window. In both cases the function of the facial nerve was interfered with, but the function was restored when the polypi were removed, and the vertigo at the same time disappeared.

Bilateral and Unilateral Total Deafness following Mumps.—Ménière ("Rev. mens. de laryng. et d'otol.," January, 1888) reports two additional cases of unilateral deafness and two of bilateral deafness following mumps. One was in a boy twelve years old, with bilateral mumps, in whom the deafness appeared on the seventh day in the left ear, and was complete. The second was in a girl, eight years old, with bilateral mumps, in whom the right ear became totally deaf on the ninth day. The third was in a boy, fourteen years old, with bilateral mumps, who became totally deaf in both ears on the fourth day. The fourth was in a boy, five years old, with bilateral parotitis, who became totally deaf in both ears on the sixth day. All these patients recovered from the parotitis, but remained totally deaf. While admitting the

possibility of an affection of the labyrinth, Ménière thinks that the more frequent cause of the deafness is a meningeal hyperæmia, leading to grave lesions of the auditory nerve at its origin or in its course.

Lactic Acid in Suppuration of the Ear.—Aysagner (*ibid.*) has corroborated the statements of Moorhof in regard to the efficacy of lactic acid in fungous caries of the auditory canal and middle ear, and shows that the acid only attacks decayed tissues. Fungous growths of the tympanum, granulations occurring in the course of purulent otitis or myringitis, polypoid vegetations, and carious and necrotic processes accompanied by fungoid growths and fleshy granulations, are all very much benefited by lactic acid. But in simple purulent inflammations of the tympanum, acute or chronic, it produces no beneficial effects whatever. Aysagner begins with solutions of one to five, and gradually increases the strength until he is able to use the pure acid. The pain produced is slight. The tissues touched by the acid turn gray, shrink up, become covered by a whitish cicatricial membrane, and eventually disappear.

The Possibility of Determining some Important Topographical Relations in the Temporal Bone from the Form of the Skull.—Koerner ("Arch. of Otol.," xvi, 4) began his investigations with the object of determining whether there was not some way of foretelling whether any given temporal bone was or was not likely to be a dangerous one to operate on in cases where that was deemed necessary. In dolichocephalous skulls the lateral walls are almost perpendicular to the base, so that the distance between the mastoid processes, on the outside, is about the same as that between the parietal tuberosities, because the lateral walls converge from above downward. The angle formed by the upper side of the pyramid and the squamous portion of the temporal bone, or the lateral wall of the skull, is in each case nearly a right angle. Hence in dolichocephalous skulls this side of the pyramid is almost horizontal, while in brachycephalous skulls it ascends sharply from without inward. These variations in the topography of the temporal bone were found to be so plain that Koerner was led to investigate the question whether the exact situation of the floor of the middle cranial fossa and the course of the transverse sinus in the temporal bone depended in any way on the form of the skull. His examinations were made on 120 temporal bones from the skulls of 38 different races, and of 22 that were exclusively German, all sawn through the median plane. Koerner was convinced that certain easily obtained measurements gave such sufficient information in regard to the form of the skull as would enable one to decide on important anatomical relations in and about the temporal bone. If the distance between the bridge of the nose and the most prominent point of the occiput, and then the distance between the parietal protuberances, are measured with calipers, and if then the first measurement is divided by the second, a number is obtained, which Koerner calls an index. This index varied in his collection between 1.55 and 1.07. In skulls where the parietal protuberances are absent the superior and posterior angle of the origin of the temporal muscle should be regarded as an equivalent point. In order to compare the varying situation of the floor of the middle cranial fossa and the transverse sinus, we must keep invariably to unalterable points on the skull. These points are: First, the most anterior portion of the linea temporalis; second, the upper end of the porus acusticus externus; third, the spina supra meatum. The next point to be established is the boundary-line between the floor itself and the lateral wall of the fossa. The results of Koerner's measurements showed that the floor of the middle cranial fossa in dolichocephalous skulls lay higher above the porus acusticus externus and the spina supra meatum than in brachycephalous skulls. Thus it is seen that, if we know the index of any skull, the table of measurements will assist greatly in determining the location of the floor of the middle cranial fossa. If we imagine a straight line projected through the outer and lower angle of the bony orbit and the upper margin of the porus, the floor of the middle cranial fossa, at least in the mastoid region, will be found to lie as high above this line as above the porus itself. In a well-pronounced dolichocephalous skull the linea temporalis may pass through the field of operation, and here we should utilize the space above as much as possible, in order to obtain a large orifice for the operation, and a good view into the bottom of the cavity. The operation is much more difficult in well-marked brachycephalic

skulls, because when the petrous bone lies higher as we proceed inward, and when the middle cranial fossa is deep, we are sure to find that the antrum lies high. We must therefore chisel obliquely, because the summit of the excavation ought not to lie any higher than the upper part of its external margin. Hence, in every operation on the mastoid it is desirable to begin as far forward as possible. It should not be forgotten that the transverse sinus occasionally advances so far forward and outward into the mastoid process that it may in some cases absolutely prohibit the operation. This, however, is rarely met with except in brachycephalous skulls with a deep middle cranial fossa. Koerner's measurements show that the sinus lies farther outward in the brachycephalous skulls than in the dolichocephalous, and that it lies farther outward on the right than on the left, independently of the form of the skull. The smaller the index, the farther forward the opening should be made; if the patient is an adult, with an index of 1.30 or less, we ought to operate if possible in front of the auricular attachment, especially if the right antrum is the one involved.

The Relative Frequency of Ear Diseases in the White and Colored Races in the United States.—Burnett (*ibid.*) finds in his experience that the negro is more prone to the acute catarrhal diseases than white persons, and that he is quite as frequently affected with chronic purulent otitis media, but that he rarely suffers from dry catarrh, and when he does it is in a mild form, never leading to such an amount of deafness as to render ordinarily loud conversation difficult to understand. Inspissation of cerumen seems to affect the two races in about the same proportion. Negro girls are more often affected with tumors of the jobules than white girls, but Burnett does not know whether this is due to race predisposition or to a greater prevalence among negro girls of the wearing of ear-rings.

Necrosis of the Labyrinth and Paralysis of the Facial Nerve.—Bezold (*ibid.*) draws the following conclusions from an analysis of all the cases hitherto published, and from a very careful examination of five cases of his own: In spite of the immediate neighborhood of the facial nerve to the morbid process, permanent disturbance of its function is the exception in necrosis of the cochlea, and in most cases elimination of the cochlea is attended with temporary disturbance only or none at all. In every case of facial paralysis accompanying long-continued suppuration of the middle ear we are justified in excluding simple superficial suppuration, and in assuming the existence of extensive destruction of the bone in most instances of the labyrinth. In 19.6 per cent. of the cases examined, death resulted in most of the cases from implication of neighboring meningeal and cerebral regions, extension of the suppurative process taking place from the posterior surface of the pyramid. The cerebellum was most frequently involved. Thirty-seven cases were without a fatal issue. In twenty-nine of these cases the sequestrum was removed from the auditory canal, while in seven cases it was extracted through fistulae in the pars mastoidea. In one case the sequestrum passed through the tube. In eighteen of the cases of recovery the discharge stopped a few weeks or months after the removal of the sequestrum. In five cases the otorrhea persisted, but was less copious. In one case atresia, and in another constriction of the bony meatus, was noticed after loss of the posterior wall of the canal.

The treatment is about the same as in necrosis of the temporal bone. The most important point is the removal of the luxuriant proliferations obstructing the passage of the sequestrum through the tympanum and the auditory canal. The sequestrum is surrounded by granulations on all sides, and we should support the tendency to their growth behind it while we remove the granulations and polypi accumulating in front of it as completely as possible, thus allowing the pressure of the granulations from behind it to exert their full influence. The most appropriate instrument for the removal of these proliferations is Wilde's snare. After the removal of the sequestrum, further involution is favored by the introduction of alcohol by Politzer's method. Strict antisepsis is absolutely necessary. Where the mastoid is not involved and where the sequestrum is probably small enough to admit of its passage through the auditory canal, no other treatment is necessary. When the mastoid is implicated, the fistulous openings should be enlarged, if they exist, or the antrum should be opened and the sequestrum removed. If the latter is too large to admit of its removal in this way,

excision of the posterior wall of the osseous canal is indicated. The after-treatment consists in the introduction of a rubber drainage-tube, subsequently substituting one of lead, and frequent washing out with a one-per-cent. solution of carbolic acid; and in keeping the ear covered with an iodoform bandage. All granulations in the tympanum are to be carefully removed with a snare, and all proliferations thoroughly curetted.

Aural Epilepsy compared with other Forms of Epilepsy.—Boucheiron ("Rev. mens. de laryngol. et d'otol.," July, 1888) gives his conclusions from the investigation of certain cases in which there was a defect in the organ of hearing connected with labyrinthine pressure and coinciding with an epileptic attack. Sometimes in these cases the deafness is very slight at first and intermittent. Aural epilepsy from irritation of the acoustic nerve alone is found in adults and in children, and may co-exist with gross or slight lesions. In this variety of epilepsy, with the excess of labyrinthine pressure, the irritation is carried by the auditory nerve to the bulbar epileptogenous center, and produces accurately all the epileptic phenomena—such as cerebral inhibition, vertigo, convulsions, stertorous breathing, etc. The onset is identical with that of trifacial epilepsy, as well as the complex irritations of the tympanic cavity and its immediate vicinity, where all the bulbar sensory nerves have branches. Aural epilepsy has an elective action on the condition of vertigo, since irritation of the nerves of the semi-circular canals exerts a very powerful action in inhibiting or exciting the apparatus of equilibration. Aural epilepsy is characterized by a diminution of hearing, or by tinnitus, preceding the attack, and sometimes by obstruction of the Eustachian tubes. The arrest of the attack is obtained by lessening the pressure of the labyrinth and acoustic nerve by insufflation of air, etc. A complete cure is possible by removing the causes of irritation by ordinary methods, or by operative procedures which lessen the pressure in the labyrinth, such as the mobilization of the stapes.

PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

A New Function of the Medulla Oblongata; Regulation of the Temperature by the Respiration.—Richet ("Arch. de phys. norm. et path.") exposed dogs to a temperature of over 30° C. (86° F.). With the elevation of the bodily temperature of the animals the number of the respirations increased to from 350 to 400 a minute—a form of respiration which the author calls polypnœa. He shows by numerous experiments that it is not the want of oxygen which causes polypnœa, because the animal must not be in need of breathing, but must be in a state of apnœa, for polypnœa to occur. An excess of carbon dioxide in the blood interferes with polypnœa. The rôle of polypnœa is to regulate the temperature exclusively, as was seen from the experiment on two dogs exposed to an equally high temperature, one of which was curarized or otherwise manipulated so as to interfere with polypnœa; the temperature of the curarized dog rose to 43.1° C. (110° F.), while that of the other did not go higher than 39.5° C. (103° F.). This new function of the nervous system the author calls thermic polypnœa, a reflex function ordinarily, but, when that is insufficient, central; and its regulation of the temperature is by an exhalation of vapor from the skin or from the lungs. Section of both vagi does not alter the course of the phenomena in any respect.

The Staining of Living Tissues.—Pellet and Talat ("Prog. méd.") kept living frogs in a weak solution of methyl blue for several days. On examination, the tissues were found to be colored blue; the glomeruli of the kidneys carmine-red, rose, or ochre-yellow, with the nuclei of the cells of the glomeruli of the same colors, but much more pronounced. Similar results were obtained from experiments on different animals. The authors conclude that the glomeruli have an oxidizing reaction and are not simply a filter, but are also at the same time a reducing apparatus. Ehrlich, in 1885, introduced easily reducible substances into the circulation of living animals, and found that in the order of their oxidizing power the different tissues stood related as follows: First, the lungs, next the cortex of the kidney, then the mucous membrane of the stomach, the liver, and the glands. The differences in reducing power, the authors say, is due to an unequal capacity for

hæmoglobin in the cytoplasm of the tissues, as may easily be seen from the fact that tissues which are thought to be comparatively rich in hæmoglobin or its remains, such as the locus niger, are relatively of a marked reducing power.

Death following Hæmorrhage and Post-hæmorrhagic Transfusion.—The following are the conclusions arrived at by Hayem ("Arch. de phys. norm. et path."): Death caused by hæmorrhage is due to anæmia followed by paralysis of the intracardiac ganglia. The paralysis of the heart is independent of that of the higher nervous centers, as seen from the experiments on animals in which the blood-supply to the head is cut off, thus paralyzing both vagi and suspending respiration; yet here the heart continues to work very regularly, though all nervous connection with the higher centers is ended. It does good work for a considerable time if, by artificial respiration, sufficiently oxygenated blood is supplied to it. Transfusion may be performed successfully as long as the intracardiac centers are not completely paralyzed by profound anæmia. Animals brought to extreme anæmia by artificial bleeding may survive if transfusion is performed before, and even at the moment of, complete abolition of the corneal reflex.

The Influence of the Brain on the Production of Animal Heat and Fever.—Gerard (*ibid.*) has performed eighteen experiments on animals, producing artificial lesions in different parts of their brains. A certain time after the production of the lesion, in each case there was presented an acceleration of the heart-beat and respiration, and a marked increase in the absorption of oxygen and the production of carbon dioxide. The urine was in every case found to be richer in nitrogen than under physiological conditions. The temperature was decidedly higher than before the operation. The author concludes that it is certain that lesions of different regions of the central nervous system bring about a perturbation of the normal calorification. He does not agree with Ott, who, in a recent publication ("Therap. Gaz."), established four cerebral heat-centers. Artificial hyperpyrexia is amenable to the action of antipyrine. The cause of the elevation of temperature in fevers must be looked for in the central nervous system.

Experimental Researches on the Chemical Phenomena of Respiration.—Poulet (*ibid.*) has discovered the presence of sodium citrate in arterial blood, and supposes that the following takes place in the lungs: The citrate of the venous blood, while passing through the pulmonary capillaries, is decomposed by oxidation, and furnishes sodium tartrate, carbon dioxide, and vapors; the two latter are expelled from the lungs by virtue of their tension being superior to that of the atmosphere. The vapors are formed as follows: I. $2(C_6H_5O_7Na_3) + 11H_2O + O_2 = 3C_6H_4O_6Na_3 + 3(2H_2O) + 4H_2O$. Two molecules of neutral citrate are acted upon by three volumes of oxygen, and form three molecules of sodium tartrate, plus four molecules of water. The origin of the carbon dioxide is explained by formula II: $C_6H_4O_7Na_3 + H_2O + O_4 = C_6H_4O_6Na_3 + 2H_2O + CO_2$. One volume of bimetallic sodium citrate, absorbing four volumes of oxygen, generates one molecule of neutral sodium tartrate, plus two volumes of carbon dioxide. The sodium tartrate of the arterial blood loses oxygen while passing through the tissues, and is reduced to neutral sodium citrate. From a number of experiments the author found that in inflammatory diseases the venous and arterial blood contained the maximum amount of sodium tartrate, because the metamorphosis was more or less suspended by the lowered interstitial nutrition. The access of oxygen into the circulation is reduced to its minimum by the diminished amount of sodium citrate generated. The nitrogenous substances are consequently insufficiently oxygenated, and that explains the diminution of urea and the excess of uric acid in certain forms of pyrexia. Dialysis of the hepatic and splenic blood and that of the portal vein revealed the presence of both sodium tartrate and sodium citrate; in the blood of the sublobular vein, however, the latter only was found. The author thinks that the liver decomposes the tartrate to form sodium citrate, and considers that gland as the indirect regulator of the absorption of oxygen. To denote the origin of these salts, they are called respectively the pulmotartrate and the hæmocitrate. The following is the author's hypothesis of the glycogenic function of the liver: The pulmotartrate present in that gland contributes probably to the conversion of dextrin into sugar; the latter, being a reducing agent of the first order, reacts as soon as it is formed on the pulmotartrate. According to the first formula, three

molecules of pulmotartrate might be reduced by the glucose, and furnish neutral hæmocitrate; the oxygenated glucose evolves carbon dioxide, which combines with another part of pulmotartrate, and forms bimetallic hæmocitrate, the latter being the source of carbon dioxide in the second formula.

The Cardiac Nucleus of Motor Fibers of the Pneumogastric Nerve in the Medulla Oblongata; the Effect of an Artificial Lesion and Destruction of that Nucleus on the Function of the Heart; the Functional Dissociation of the Cardio-motor and Respiratory Phenomena.—Laborde (*ibid.*) has proved experimentally on animals the existence of a cardiac nucleus of motor fibers of the vagi in the medulla oblongata, which he locates in the middle of the lateral part of its posterior surface, outside the region circumscribed by the V-shaped gray substance. The author punctured that nucleus, having previously avoided all conditions which could cause a suspension of the heart's action by reflex irritation, such as an irritation of the restiform fibers, etc. The heart stopped after a previous irregularity of action; the respiration, however, continued very regularly. Complete destruction of the same nucleus was effected, and a marked acceleration of the heart's movements followed. The author supposes that the accelerator and the regulator centers are separated from one another, and that they are independent in action.

The Physiology of the Liver; Researches on the Hepatic Ferments.—Dastre (*ibid.*) has demonstrated the existence of an inversive ferment secreted by the hepatic cells, and the non-existence of the supposed amyolytic glycogen ferment. The transformation of glycogen into sugar in the liver the author considers to be a result of the vital function, or nutrition, of the hepatic cells. All circumstances which diminish the vitality of the cells interfere with the formation of sugar. The transformation of glycogen into sugar, when in contact with hepatic decoctions, is due to the presence of micro-organisms. The following are some of the author's arguments: 1. Glycogen acted upon by sterilized hepatic decoctions is not transformed into sugar, whereas the real pancreatic ferment, taken for comparison under the same conditions, is capable of transforming starch and glycogen. 2. The salivary and pancreatic ferments are active under a temperature of 30° C. (86° F.); a temperature of from 0° to 3° C. (32° to 37.4° F.) paralyzes the action of hepatic decoction upon glycogen. 3. The activity of the hepatic decoction increases under a normal temperature with the duration of time, which, as a consequence, implies the generation of micro-organisms.

The Influence of Cold and Heat on the Chemical Phenomena of Respiration and Elementary Nutrition.—Quinquand (*ibid.*) points out that the administration to animals of cold baths, general or partial, increases the absorption of oxygen and the exhalation of carbon dioxide if, after the bath, the animal's temperature is about from 28° to 30° C. (82.4° to 86° F.). The author found, by analysis of the arterial and venous blood, that at this temperature the loss of oxygen and gain of carbonic dioxide by a given volume of blood passing through the tissues might attain double and even triple the physiological amount. The combustions, oxidations, and nutritive exchanges are all increased by the giving of a cold bath. If, however, the central temperature is brought to 26° C. (78.8° F.) or less, the animal dies with a subnormal temperature, although the pulmonary exchanges are increased, the blood is at its maximum of respiratory capacity, and the blood of the right heart is arterIALIZED. The death is due to the retardation of the ultimate cellular nutrition in the tissues, not to asphyxia. Immersion for a short time in a cold bath increases the amount of sugar present in the blood; for that reason, the author remarks, diabetic patients must avoid cold. If an animal is kept for eight or ten hours in the bath, the sugar begins to decrease, first in the blood and then in the liver. The administration of hot baths gives similar results. A warm bath must not raise the animal's temperature higher than 42° C. (107.6° F.). A central temperature of from 43° to 44° C. (109.4° to 111.2° F.) kills an animal in the same manner as a cold bath does, stopping the nutrition in the tissue cells. The amount of oxygen absorbed and carbon dioxide exhaled after either a cold or a hot bath is decidedly superior to the normal; it is relatively greater, however, after a cold bath. Both a cold and a hot bath diminish the quantity of blood passed through the vessels in a given time.

GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

Experience with Pyosalpinx and its Operative Removal.—Gusserow ("Arch. f. Gyn.," xxxii, 2) has performed laparotomy for pyosalpinx thirty-one times during the past three years, both tubes being removed in ten cases. He defines pyosalpinx as that form of disease of the Fallopian tube in which the latter, filled with pus, forms a sac which is closed by adhesion to neighboring structures. Clinically, purulent salpingitis is indistinguishable from pyosalpinx, however it may be distinguished anatomically. The point of greatest importance clinically—that is, to the patient—is whether the diseased tube is closed and there has or has not been an accumulation of the purulent secretion of its mucous membrane. Of the thirty-one operations, only one resulted fatally, and that from septic peritonitis. The study of the cases teaches little as to the ætiology of pyosalpinx. Perimetritis had existed for a longer or briefer period in all cases before the tumor in the pelvis was recognized, and it is believed that such a condition must always precede pyosalpinx. Gonorrhœa was frequently found to have been an antecedent to the perimetritis, but so also were miscarriage and parturition. In those cases in which infection by gonococci did not take place there was probably, primarily, catarrh of the uterine mucous membrane which extended to the mucous membrane of the tube. Next, the contents of the tube probably found their way into the abdominal cavity and set up a localized peritonitis. The passage of the tubal contents into the abdominal cavity was favored, in some cases at least, by traumatic influences, such as blows, falls, etc. It is important to notice that in almost every one of the author's cases the ovaries were implicated in the tubal disease, perhaps forming the most intimate relationship with the tubes, containing abscesses in some cases with the abscess cavity communicating with the purulent collection in the tube. The clinical phenomena of the disease are those of chronic perimetritis, with sensations of pain and pressure in the pelvis, the intensity of which may be governed by the seat or the size of the tubal sac. Those patients who can remain quiet and rest suffer far less than those who must attend to work or household cares. It follows from this, also, that the disease is much more common in the poorer than in the well-to-do classes. With the congestion of menstruation the pain is increased; it may be violent and colicky, and it may be accompanied by tympanites, vomiting, and fever. In none of the cases were there symptoms which could be considered absolutely distinctive of pyosalpinx. Profuse menstruation may be present, but is not necessarily an evidence of pyosalpinx. The danger of rupture of the tube, and its almost certainly fatal consequences, should inspire one with a feeling of the urgent need of all such cases for operative interference. The differential diagnosis of this condition from small subserous myomata is not always easy. The history of the case must furnish us with important particulars. The distinction from small tumors of the ovaries or broad ligaments is also oftentimes a matter of no little difficulty. The removal of tubal sacs is usually difficult, for reasons which are perfectly obvious. The operation may usually be facilitated by allowing an assistant, with one or two fingers in the vagina, to press the uterus forward toward the abdominal wound as far as possible. By this means the tubes can be brought within reach, which would otherwise be impossible in some cases. Gusserow favors the removal of the ovary in all cases with its tube, and in case the disease is limited to one tube, he would leave the other intact. The danger of ventral hernia is a real one, and the author thinks it may best be avoided by making the abdominal wound as small as possible.

Suspected and Malignant Adenoma.—The following statements represent (Fürst's) the author's conclusions upon this subject ("Ztsch. f. Geb. u. Gyn.," Bd. xiv, H. 2):

1. Adenoma uteri simplex, or simple glandular hyperplasia, in which the uterine glands are increased in number and enlarged, but still preserve their typical character in structure and as to their epithelial covering—in which, also, the interstitial tissue is compressed, though there is no evidence of extraordinary cell proliferation—must be regarded as benign. It is not advisable, however, to treat this condition by curettement, application of caustic substances, and similar means, but by excision, for the new growth tends to malignant degeneration.

2. Adenoma uteri suspectum, or destructive glandular hyperplasia,

which, whether it is localized or diffuse, shows a new formation of atypical gland tubes, together with more or fewer normal glands imbedded in connective tissue which is rich in cells—which also shows an increase in the gland epithelium and a tendency to proliferation in its lower portions—must be regarded as a suspicious condition and inclined to malignancy, even in cases in which no solid processes are demonstrable. In such cases excision will not suffice, but the uterus should be extirpated as soon as possible, the prognosis with reference to radical cure being good.

3. Adenocarcinoma uteri, in which the typical gland formations have almost entirely disappeared, and in which we find epithelial infiltration and cancer processes in a foundation which is rich in cells, is absolutely malignant in character. Even if the uterus is extirpated the prognosis as to radical cure is not good, for the chances of being able to extend the section into healthy tissue are poor; hence the treatment can be only palliative for the greater number of cases.

4. The clinical symptoms in connection with cervix adenoma are of less value in determining as to operative procedures than the result of the pathologico-anatomical examination. As early an examination as possible of an excised portion of the mucous membrane is therefore imperative.

The Primary and Final Results in Operations for Prolapsus Uteri.—Cohn ("Ztsch. f. Geb. u. Gyn.," xiv, 2) concludes:

1. The continuous catgut suture gives the securest guarantee of primary union in addition to relative ease and rapidity in the performance of the operations. The objections which have been made to catgut are not valid. The superficial union of the wound obtainable by this means gives a firm cicatrix which is favorable to a permanent result.

2. Colpo-perinæorrhaphy may be the means of permanently curing even extensive conditions of prolapse. Hegar's method answers fully the demands which may be made upon it. The reasons for failure as regards complete healing in nearly half of the author's cases are as follows:

a. Some of the cases which are referred to *recurrence of the cause of operation* are not recurrences in the proper sense of the term, but simply cases in which healing did not take place.

b. Some of the recurrences are attributable to incompleteness of the operation, only anterior colporrhaphy having been done.

c. The other recurrences are due to such factors as severe parturition, quick repetition of pregnancy, and particular anatomical conditions of the posterior vaginal wall. In order to obtain permanent results from operations of this character it is desirable:

1. In conditions of prolapse to operate upon the posterior vaginal wall at the earliest possible moment.

2. To narrow the vagina as much as possible throughout its entire extent by the high operation of posterior colporrhaphy.

3. To make as high a perinæum as possible, bringing forward the narrow introitus. The higher the perinæum, the firmer the pelvic floor, the more the vagina is drawn forward, the more favorable will be the chances of permanent recovery.

Tuberculous Ulceration of the Vulva.—Zweigbaum ("Brit. Med. Jour.," June 23, 1888) reports a case of this rare form of tuberculosis. The patient was treated in 1884 for "fungous ulceration" of the vaginal portion of the uterus by means of Paquelin's cautery, a cure resulting. She was then thirty-one years old, and had borne five children. The following year there was found a deep, painful ulcer just within the left posterior vaginal wall, and cauliflower excrescence of the *portio vaginalis*. The left *labium minus* was almost destroyed by ulceration, and microscopical examination of the contiguous tissue revealed tubercle bacilli. Auscultation and percussion also revealed obscure signs of phthisis at the apex of the right lung, the spleen was enlarged, and the patient had fever. Death followed after five months, having been preceded by purulent expectoration and oedema of the lower extremities. Syphilis was satisfactorily excluded from the case.

The author has been unable to find more than two recorded cases like this, these having been reported by Deschamps and Chiari, one each. The disease is not so rare, however, in connection with general tuberculosis. Five cases are reported in which infection was attributa-

ble to coitus, and others in which it was due to contact with tuberculous nurses. Danger exists from the use of the bedclothes, closets, or baths which have been used by tuberculous subjects, and self-infection may occur from the sputa or faeces. The conditions which favor the establishment of the tuberculous process in a particular part are not yet known, but certain pathological processes induce a predisposition to it, as is the case with the lungs. Cleanliness is, above all things, a necessary condition in order to its prevention.

Notes on Three Years' Ovariectomy Work in the Samaritan Free Hospital; Eighty-two Cases without a Death.—Bantock ("Brit. Med. Jour.," June 30, 1888) reports a successful series of eighty-two cases preceded by one fatal case. In forty-seven of the cases there were adhesions involving the parietes or omentum, or both. In some of them the tumor was adherent to the pelvic organs, and in a few to the intestines also. In one, with parietal adhesions, the patient had reached the seventh month of her first pregnancy. In six cases there was no pedicle, the tumor requiring enucleation. In one the cyst was suppurating; in another nine ligatures were required to arrest the bleeding from the stump, which was formed by the left broad ligament and the left side of the uterus. Other interesting complications were shown by other cases. In only twenty-eight were there no adhesions, and one of these cases was complicated by a large umbilical hernia, which was successfully operated upon at the same time that the ovarian tumor was removed. In forty-five of the cases a drainage-tube was required, the peritoneal cavity in most of them being washed out with warm water. In thirty-four cases both ovaries were diseased, and were removed. In nine cases the tumors were dermoid, both ovaries being affected in one of the cases. In only four of these cases were there adhesions. In five cases the cyst had ruptured, in all of which the peritoneal cavity was washed out and a drainage-tube used. In three of the cases the disease was malignant; one was fatal after fourteen months from extensively disseminated cancer; the second recurred soon after operation, and ended fatally in a short time; in the third there was a sarcoma of the left ovary weighing six pounds, another of the right ovary weighing three fourths of a pound, and the pelvic and lumbar glands were already infected. The operation was recovered from, but gastric irritation and oedema of the lower extremities recurred in a few weeks, and were quickly fatal. In none of the eighty-two cases were antiseptic substances used. Warm water was used for washing out the peritoneal cavity whenever the contents of the cyst had escaped into it, and in all such cases a drainage-tube was employed. In no case was either opium or alcohol given. A comparison of the results obtained at the Samaritan Hospital for the years 1885, 1886, and 1887 is made between the work of the author and that of the three other operators at that hospital, who differ with him in treatment in that they use Listerism. For this period Bantock had seventy-nine cases, of which only one was fatal. The others had one hundred and twenty-one cases, with eleven deaths. Of the one hundred and twenty-one cases, however, three should be added to Bantock's list, as they were successful cases, operated upon by Doran after he had abandoned Listerism.

Post-operative Reflex Accidents consequent upon Utero-ovarian Operations; also Remarks concerning the Guttural Reflex.—Just Championnière ("Nouv. arch. d'obst. et de gyn.," June 25, 1888) says that physiologists long since showed that irritation of organs supplied with nerves causes reflexes of various kinds, physicians have long studied the painful phenomena associated with organs which, though at a distance from the uterus and ovaries, were yet influenced by them, but surgeons have given little attention to troubles due to irritation of the uterus, its annexa, or the peripheric nerve plexuses, except to perform surgical operations upon the uterus or ovaries. This may be due to the fact that the first abdominal operations were performed for the removal of ovarian cysts, and, owing to the precedent destruction of the ovaries, reflex nervous phenomena must necessarily be rare. In the early days of abdominal operations, too, interest centered upon the prevention of septic peritonitis, which was most dreaded of all the accidents which might follow the operations. Of the various books and papers which have been written upon these operations, only one, that of Thiriar, entitled "De l'ovariotomie antiseptique," has anything particular to say in regard to the reflexes following operations, and he refers only to certain complications common to all abdominal operations. The author

has studied this subject carefully in connection with nearly 200 abdominal operations which he has performed, and a large experience in obstetrical work. By post-operative reflexes the author does not refer to the vomiting, the modified respiration and heart action, and cough which are sometimes excited by forcible irritation of the uterus or ovaries, but subside when the irritation is removed. In operations for the removal of parovarian cysts, which are usually simple, the results are not infrequently bad owing to disturbance of the substance of the ovary. In castration operations the results are often more severe than in those for uterine myomata. Among the utero-ovarian operations, those which present the most gravity are the ones in which the body of the uterus with the peripheric nerve plexuses are concerned. If the author's explanation as to reflex influence is incorrect, he confesses his inability to explain why operations which have been performed rapidly and without grave complications have resulted fatally while many others apparently more severe have terminated in cures.

In vegetating tumors of the ovary the reflexes following operations are particularly significant. The greatest number of accidents in such cases is observed in cases in which the substance of the uterus and the nerve plexuses of the organ are secured by ligature. The reflex phenomena generally differ decidedly from those which are observed in connection with septicæmia. Sleep may be impossible though the patient complains of no pain, and there is little if any rise of temperature until just before death. The nature of these accidents may be characterized by a want of co-ordination in the temperature, pulse, and respiration. The pulse is small and rapid and subject to sudden changes from very slight causes. The expression of the countenance is very bad, both in the fatal cases and in those which recover. Vomiting may be absent, but it is usually present and distressing in character. Attacks of dyspnœa are of frequent occurrence, with accelerated breathing in the intervals. These phenomena may be regarded as immediate or as secondary. In the first form they may be mistaken for shock and are due to irritation of the nerves by the ligatures which have been required. In the second form they have not appeared until after an interval of several days in the author's operations, and have all occurred in cases of hysterectomy in which metallic ligatures were used. Of all the post-operative reflex accidents, it is believed that the guttural reflex or spitting (*crachotement*) is the most important and most characteristic, and it is of very common occurrence after the operations which have been referred to—that is, those upon the utero-ovarian apparatus. It has never been observed by the author in connection with other abdominal operations. Patients describe it by saying that they have a desire to spit, but are unable to do so. This symptom was at first observed by the author only in connection with the reflexes which followed hysterectomy, but it was subsequently seen in connection with two cases of ovarian cyst, operations for which ended fatally. It may occur when the pulse is not much accelerated and the temperature normal. It may precede nausea and vomiting, and sometimes seems to be a prodrome of such phenomena. It has its analogue in the salivation and spitting which often occur during pregnancy, and has been recognized as an utero-ovarian reflex in connection with circumuterine hæmatocele. With the guttural reflex may be associated a tendency to syncope, a sensation of suffocation without marked acceleration of the respiration, a small and mobile pulse, an anxious feeling, insomnia, and a pronounced inclination to weep. In the diagnosis, the condition in which the foregoing phenomena occur is to be distinguished from shock by the fact that in the latter the phenomena are associated with depression rather than excitation. Vomiting occurring soon after an operation must be considered as due to peritoneal or to the anæsthetic influence rather than to reflex utero-ovarian derangement. Morphine or chloral in small doses after operations is recommended as a preventive of these reflex phenomena. Should these prove inefficacious, bromide of potassium should be given. In performing the utero-ovarian operations silk should be preferred as a ligature, and one should be particular to see that a sufficient number of ligatures is used to effectually crush the nerves and not merely pinch them. Suitable care in this respect will obviate many of the accidents such as have been described, and those who have obtained the best results undoubtedly owe them in large measure to such care.

Curetting in Endometritis.—Boureau ("Nouv. arch. d'obst. et de

gyn.," June 25, 1888) offers the following conclusions respecting this operation:

1. Intra-uterine therapeutics realizes the only logical and rational treatment which is applicable to lesions of the uterine mucous membrane occurring in the evolution of an acute process.

2. Intra-uterine therapeutics should be radical, and necessitates the use of destructive agents capable of removing the last vestiges of the morbid tissue. Experience has shown that incomplete destruction of the diseased mucous membrane is almost always followed by a recurrence of the trouble.

3. Chronic endometritis of the body of the uterus is one of the most rebellious affections, and will yield only to destructive processes.

4. Such processes may be either caustics or cutting instruments.

5. The instruction which is furnished by a great number of cases is that the curette is superior to caustics both as to its action and as to security.

6. Curetting alone and curetting combined with *écouvillonnage* (sponging or swabbing out) are operations which can be practiced without submitting the patient to the least danger, always on the condition that the contra-indications are observed and a rigorous antisepsis practiced before, during, and after the operations. The action of creasote as a caustic does not have the same danger which attends the use of those caustics which produce an eschar.

7. In the statistics of Doléris's clinic for 1887 one hundred and ten operations of curetting are recorded, with only one accident resulting. This occurred in a turbulent patient in the form of a mild attack of perimetritis from which she rapidly recovered. To these one hundred and ten cases may be added nearly four hundred additional ones performed in previous years without accident or complication which was worthy of notice.

8. Antiseptic *écouvillonnage* may be practiced alone in all forms of endometritis, especially in mild and recent cases. In long-standing hæmorrhagic, vegetating, and polypoid varieties it is better to combine curetting with *écouvillonnage*.

9. The *écouvillon* brushes the uterine cavity systematically, completes the action of the curette, and relieves the intra-uterine surface of the *débris* left adherent by the curette. It also furnishes an excellent opportunity whereby one may apply creasote to the surface which has been scraped.

10. Curetting may be considered a perfect curative means for different forms of metritis, especially for hæmorrhagic metritis. In the latter condition it always gives good results, even after all other means have failed. It is sometimes necessary to repeat the operation at intervals more or less remote.

11. Curetting is not only a therapeutic agent which is worthy of great esteem, it is also an exploratory measure which is often indispensable, for it enables one to establish an exact diagnosis by furnishing a layer of mucous membrane which can be submitted to microscopic examination. Exploratory curetting is also entirely harmless; the pain which attends the operation is quite supportable, and it may be done without causing the patient to remove her clothes.

12. The first menstruation which is due after curetting is usually missed, but the second usually comes on normally.

13. Curetting favors fecundity.

Sixteen Abdominal Hysterectomies.—Terrillon ("Ann. de gyn. et d'obst.," May, 1888) draws the following conclusions from these sixteen operations and from a study of sixty additional cases of fibroid tumor of the uterus, together with a study of the statistics of the work done by other operators in a similar class of cases:

1. Fibromata of the uterus constitute a grave condition in certain cases. This depends upon their volume and the complications resulting from them, upon the continuous and often fatal hæmorrhages which they excite, and upon other accidents—such as phlebitis, albuminuria, necrobiosis of the tumor, septicæmia, etc.

2. Death often results from these tumors. In every case they are the cause of a painful and often insupportable infirmity, especially in women who are obliged to work for their living.

3. When fibromata present such conditions as have been mentioned, surgical treatment is called for, especially after all forms of medical treatment have proved unavailing: (1) by ablation of the ovaries and

tubes; (2) by abdominal hysterectomy. This does not refer to those tumors which are more or less readily accessible by the vagina, for which other considerations will obtain.

4. Abdominal hysterectomy is a grave operation, which gives an average mortality of thirty per cent. when voluminous and really dangerous tumors are attacked, and only such are now under consideration.

5. Ablation of the ovaries and tubes gives excellent results in cases of small or moderately large abdominal fibromata which cause severe hæmorrhage. It should always be preferred when practicable to hysterectomy, as it is much less dangerous.

It must not be overlooked that in many cases surgical treatment is not called for, especially if the patient can take a great deal of rest and receive proper tonic medical treatment.

The Treatment of Retroflexion of the Uterus.—Skutsch ("Ctrlbl. f. Gyn.," June 16, 1888) says that, so long as we are not always in a position to employ a causal therapy for cases of retroflexion produced by anomalous conditions of the uterine supports, we must make use of a substitute for the lost functions of these supports. Such a substitute may be furnished by pessaries, with which better results can be obtained than are usually reported. The failure in treatment by means of pessaries is usually due to the fact that an improper instrument for the given case is used, and that the obstacles for proper reposition of the organ and for keeping it in a normal position are not removed. Those cases in which the peritoneal adhesions are too firm to admit of separation according to Schultze's method, and those in which there are extensive parametric cicatrices, are the ones which are most likely to prove incurable. Even in such cases successful results are often accomplished by patient trial with pessaries, a resort to laparotomy being thus avoided. The way is prepared for such a result by gradual extension and methodical massage of the adhesions and cicatrices. For the past three years the author has had firm convictions of the truth of the foregoing statements. They were established by experience in a case in which there was firm retroflexion, and in which the presence of heart lesions forbade treatment under anæsthesia. Success came by the patient use of extension and massage. In cases in which the peritoneal adhesions are long and slender, extension is accomplished by methodical attempts at bimanual replacement of the displaced organ. In the case of extensive flat adhesions, or the remains of parametric exudates, bimanual massage according to the method of Brandt is indicated, and, after the exudate has diminished, gradual extension may be practiced. If the difficulty does not consist in replacement, but in retention of the organ after it has been replaced, extension by the bimanual method may be practiced at once, and the adhesions being divided, the proper position may readily be maintained by a suitable pessary. Skill in diagnosis is essential before this operation is attempted, and much attention should be given to examination of the condition of the pelvic floor. The inner hand examines from the vagina or the rectum, according to circumstances, while the outer one should pass deeply into the pelvis over the pyriformis and levator-ani muscles. During the last four years 230 patients with retroflexion have been treated at Schultze's clinic (Jena). In 25 no treatment for this condition was given on account of other indications; of the remainder, 182 were successfully treated by means of pessaries, and in only 4 cases was an intra-uterine stem required. In 15 cases pessaries could be used after successful massage and extension. In 19 cases peritoneal adhesions were separated by Schultze's method with no bad results, only partial separation being obtained, however, in 4 of the cases.

The Anatomy of Healthy and Diseased Ovaries.—Nagel ("Ctrlbl. f. Gyn.," May 26, 1888) has examined many specimens from ovaries which have been removed by Gusserow and has reached the following conclusions: Chronic oophoritis can not be divided into chronic follicular and chronic interstitial varieties. What is commonly known as chronic oophoritis is the so-called chronic interstitial variety. It always begins with disease of the interstitial tissue, which results in the Graafian follicles losing their normal appearance, and in an inability on the part of the ovary to discharge ova which are susceptible of fructification, until finally the follicles are destroyed. The most frequent cause of this disease is circumscribed peritonitis. The peripheral portions of the ovaries are first involved, and gradually the disease affects the deeper structure. Seldom has proof been found that

the disease began as acute interstitial oophoritis. The so-called chronic follicular oophoritis, or small-cystic follicular degeneration of the ovaries, is a physiological condition. It is neither an inflammation of the ovary nor the beginning of a cyst, but a condition in which there is an increase of the follicles containing perceptible, healthy ova, which is not due to disease of the stroma of the ovary. In the so-called *hydrops folliculi* the follicle can never become larger than when it first assumed this condition; in other words, it can not develop into a true cyst. It must be considered as a phenomenon which is secondary to disease of the ovarian tissue. The simple non-epithelial cysts usually, if not always, originate from cystic degeneration of the corpus luteum, and this is never followed by contraction and cicatrization. The corpus luteum is the product of a proliferation process which leads to a new formation in the ovarian tissue.

Gonorrhœal Infection in Women.—Sinclair ("Ctrlbl. f. Gyn.," May 12, 1888) remarks that, since Noeggerath alarmed the medical world in 1872 by his monograph on latent gonorrhœa in women, much attention has been devoted to the relation between gonorrhœa and diseases peculiar to women. The discovery of the gonococcus by Neisser followed in 1879. Among English physicians in general these discoveries remained unheeded, and the author states that his object in writing is to show, especially to his English colleagues, that the disease is indeed a very common one, and fraught with great danger to health. A rich clinical experience has established his views in this respect. He found that acute gonorrhœa might attack the urethra and glands of Bartholin without involving the vagina, and that the cervix was almost invariably involved. The progress of the disease to the tubes is of very common occurrence, but a subsequent general peritonitis was of rare occurrence. The disease often progresses insidiously, and is especially apt to attack young married women within a year or two after their marriage, causing dysmenorrhœa, leucorrhœa, and pelvic inflammation, especially if an abortion or a delivery at term takes place. Should perimetritis occur, the patient almost certainly will be sterile subsequently. The means of treatment suggested consist in the internal use of sublimate and copaiba balsam. If the uterus is involved, injections of tincture of iodine into its cavity are recommended.

The Treatment of Uterine Myomata by Apostoli's Method.—Robson ("Lancet," June 23, 1888) gives details of several cases in which Apostoli's method was used. In one a large tumor reaching to the ribs had been reduced to a simple pelvic enlargement in a little over two months, a current of 150 to 270 milliampères having been used twelve times. Previous to treatment, menorrhagia had compelled the patient to use eighteen napkins twice a month. When treatment ceased she required only six napkins once a month. In another case the tumor had steadily increased, though nineteen applications had been made in the course of three months, each application lasting ten minutes, and 180 to 300 milliampères being used. In other cases hæmorrhage had been controlled and decided improvement obtained, and in no case had the treatment caused inconvenience. Apostoli's directions had been strictly carried out in all cases, and the author gave as his opinion that while electrolysis was a powerful agent for treating some fibroid tumors successfully, we must not expect too much from it, as in some cases it failed to be of any benefit. At present it is desirable that all cases which are treated should be reported, as a positive conclusion can not yet be reached from existing data. Cases in which there is subinvolution, endometritis, or hæmorrhage can hardly fail to be benefited. The author was in the habit of using a battery consisting of fifty-one pint Leclanché cells, a double collector, a water rheostat, and a Gaiffe's galvanometer.

Electrolysis in Gynecological Practice.—Steavenson *et al.* ("Lancet," June 23, 1888) took part in a discussion upon this subject before the London Obstetrical Society, June 6th. W. E. Steavenson called attention to the numerous cauterizing agents which are used in gynecological practice, including the actual cautery, Paquelin's cautery, and the galvano-cautery. The particular object of the paper was to call for a more extensive use of the electrolytic method of treatment. Such a method is particularly useful in treating disease in parts which are difficult of access, notably the genital organs of women. The galvano-cautery is more efficient than any other form of caustic. It can be accurately localized, the quantity to be used and the degree of destruction of tis-

sue to be obtained can be accurately determined, and its action can be begun and arrested at will. Its value has been tested in the treatment of stricture of the urethra, stenosis of the os uteri and cervical canal, dysmenorrhœa, sterility, abrasions of the cervix, extra-uterine foetation, uterine fibromata, and cancer.

Lovell Drage had treated chronic cervical catarrh successfully with electrolysis. Menstruation was not interfered with, and no pain was caused either by the passage of the current or subsequently.

R. A. Gibbons had used this method for treating chronic metritis, endotrachelitis, lupus minimus, urethral caruncle, and uterine cancer. In the last-mentioned disease the effect of the positive pole in arresting bleeding was very satisfactory. The negative pole had been found useful as a caustic in chronic inflammatory conditions of the body and neck of the uterus; with it one was enabled to make applications directly to a diseased surface.

J. Shaw described the appearance of a myofibroma which was subjected to the action of the constant current twelve hours after its removal. He referred to the different action of the positive and negative poles upon granulations and the effects of the constant current in intra-uterine applications and punctures upon the circulation, temperature, sensibility to pain, and urinary excretion. He concluded that the constant current acts upon a fibroid (1) to but a small degree by electrolytic action, the positive pole affecting the cellular and the negative the formed elements; (2) by the hæmostatic action of the positive pole and the derivative influence of the negative; (3) by increased arterial tension, and hence diminished nutrition, with alteration of the mutual relation of the fluid and solid elements.

Horrocks observed that electricity possessed no specific virtue, but acted merely as stimulant, caustic, or cautery. A suitable battery with galvanometer was very expensive, and in general practice would not be preferred to acids, alkalies, the knife, or the thermo-cautery. Even in the treatment of paralysis, careful friction was as beneficial as electricity.

Aust Lawrence called attention to the by no means unimportant share which rest in bed, purgation, and other means of general treatment played in the care of those who had been treated by electricity.

Herman believed that the value of electricity was not to be tested by a *a priori* argument but by clinical observation, and this showed that the results of treatment were no better by electricity than by other well-known means.

William Duncan was satisfied that electricity was something more than a mere cauterizing agent, since by its use he had not only seen metrorrhagia in connection with myomata relieved, but also a diminution in the size of the tumor.

The Treatment of Peritoneal Tuberculosis, with Special Reference to Laparotomy.—Pribram ("Contrib. f. Gyn.," June 2, 1888) states that the operative treatment of tuberculosis of the peritonæum has been the subject of much discussion of late by the gynæcologists and surgeons, and that they have generally expressed themselves in favor of laparotomy as the result of a series of successful operations. The author looks at the question from its clinico-medical standpoint. For certain cases of peritoneal tuberculosis he does not question the value of laparotomy, but he warns against a too optimistic view of the results of such treatment, and believes that cases for such operations should be very carefully selected. In those cases in which the tuberculous affection of the peritoneum is only a portion of a serious general affection, laparotomy should not be attempted. Those cases which are purely peritoneal, or are complicated only to a slight degree by affections of the lungs, bones, and intestines, especially if the latter are not very progressive and there are no intestinal ulcerations, should have a methodical treatment. First the hectic fever should be combated with suitable antipyretics, and it may be overcome by either of several recently introduced agents of this character. The patients should at first receive light nourishment with especial reference to the use of fat-producers, and subsequently the nutriment may be more substantial. If the nutrition is good and there is no diarrhœa, a moderate use of diuretics is advisable for some time. The abdominal walls should receive systematic inunction with green soap, moderate massage without force being used. Of course the most favorable climatic and hygienic conditions are essential. If after four weeks of the foregoing method of treatment

absorption has not taken place, the hectic continuing, laparotomy may be tried. An exploratory incision may be necessary to diagnose between ovarian cyst and peritoneal tuberculosis.

Miscellany.

The late Dr. Milner Fothergill.—The "Edinburgh Medical Journal" publishes the following obituary notice of the late Dr. John Milner Fothergill:

"Between the years 1860–1865 the Edinburgh School of Medicine was at the zenith of its fame as a teaching school. Goodsir and Christison, Syme, Simpson, and Hughes Bennett within the University, Spence, Gairdner, Warburton Begbie, and Littlejohn in the extra-mural class-rooms, made it a school of extraordinary power. The new infirmary and the new university buildings, with all the magnificent teaching appliances of the last decade, were still unthought of; but with the small class-rooms, starved laboratories, and cramped hospital wards, still good work was done, and immense enthusiasm was roused in the leading students. In those days there was probably more room for individuality, and oddities were probably more characteristic and less noticeable. Nowadays the constant grind which is absolutely essential even for a pass, the multiplication of text-books, and the much less powerful personality of the professoriate, with the stern discipline of a students' representative council, tend in the direction of producing a complacent, self-satisfied mediocrity, a level—probably a high one—of general education in the profession; yet we sometimes miss the outstanding characters of an earlier age.

"Foremost among these was John Milner Fothergill. Born of a stout dalesmen race, he might, by his vast personality, have been an exaggerated caricature of the wildest dream ever imagined by a satirist of the typical John Bull. Enormously stout, even as a lad, with a round rosy face and long black hair, his great carcass, set upon sturdy legs wide apart, might be constantly seen at the University gate, a center of all mirth and jollity. To him the students' hostelry was too well known. By many names he was called; some of his teachers will remember him as the 'Pirate Captain.' But with all his wild Bohemianism and his Falstaffian ways and bulk, any one who came in contact with him who had an eye to see recognized in him a man of a commanding personality, with immense power of good or evil. The writer, then a demonstrator, once said to him, 'Fothergill, you are a very clever fellow; why do you pretend not to be, and waste your time?' 'Do you think I am clever?' said he. 'Yes, I know it.' 'Well, then, watch me and I'll try.' And from that day to this, with all his oddities, rustic manners, and intense self-consciousness, Fothergill showed himself to be a man of great ability, power of work, perseverance, and originality in expression, if not in experiment.

"A great and successful student he never was at the University, even after he began to work; he had wasted too much time for that; but he took his degree in 1865 with credit, passed the colleges, and then, after graduation, with a loyalty that did him much credit, he went home to Morland to assist his father in the rough work of a general country practice in the Westmorland hills. His father was a quaint specimen of the old school, eupeptic, square-headed, with a firmly knit frame, without the enormous bulk of his son, who, with native shrewdness, much kindness, and the wisdom of experience, attended the stalwart dalesmen and statesmen of his native valleys. He came, we are told, of a good medical ancestry, including Dr. John Fothergill, of London, and Anthony Fothergill, of Bath. The latter was the Fothergill of the Fothergillian gold medal, which distinction Milner Fothergill afterward won. For four years, however, he stood the burden of the country practice, and gained experience of a certain kind; but wishing a larger field, where he could see more sick folk with less distances between them, he went off, got experience in a great dispensary in Leeds, where, in 1869, he obtained the post of senior resident medical officer. He worked then so well that in 1870 he obtained the Hastings medal of the association for an essay on digitalis. He then, after two years

at Leeds, went to the Continent, working under Rokitansky at Vienna and Traube at Berlin.

"But London was the goal of his hopes, and a chair of clinical medicine with ample time for study and writing was his proper sphere. Unfitted by his bodily frame for work as a general practitioner, he was eminently endowed with a power of assimilating information, and of putting it in an easy way in fair conversational language, so that he that runs may read. So in 1872 he settled in London as a physician, taking the membership of the Royal College of Physicians, and was soon elected assistant physician to the West London Hospital. After some years he became assistant physician and afterward physician to the London Hospital for Diseases of the Chest. He never had the good fortune to obtain a post in a great teaching school, so he had to teach from his desk, if not in the wards.

"Fothergill was a voluminous writer, and since the time, now eighteen years ago, when he won the Hastings medal with his essay on 'Digitalis; its Mode of Action and its Use,' numerous works have appeared with his well-known name on the title-page. Among these we may mention as the most important 'The Heart and its Diseases,' a thoroughly practical treatise, which attained a success in every way deserved; 'The Practitioner's Hand-book of Treatment,' based upon rational therapeutics, and the means, through several editions, of leading many a younger member of the profession to treat his cases on scientific principles; 'The Antagonism of Therapeutic Agents,' which gained the medal of the medical society bearing the name of his ancestor; 'Indigestion, Biliousness, and Gout in its Protean Aspects,' marked by keen appreciation of the causal nexus existing between these affections; 'The Diseases of Sedentary and Advanced Life,' a somewhat diffuse and rambling series of papers upon many of these ailments; 'A Manual of Dietetics,' embracing much valuable teaching upon a subject too little studied; and 'Vaso-renal Change *versus* Bright's Disease,' in which, with much that was of real value, there was a highly artificial and largely imaginary division of the inhabitants of this country into two classes—the Norse and Arab types. In all these works the strong individuality of the writer was prominent; and if we were inclined to regret that he allowed his tendency to employ language of a more racy than scientific character to display itself, we could not but admit the force and suggestiveness of his teaching.

"If not an original thinker in the strict sense of the term, his mind was endowed with two gifts which often pass for originality. He had the power of bringing knowledge to a focus, so to speak, and he had also the faculty of catching the current tendency of the times and rendering it articulate. These two characteristics made it possible for him to make his own clear ideas stand out in strong relief upon the hazy background of scarcely formed conjecture. They are valuable characteristics, and, used as they have been by him, they have been the means of rendering real service to many a younger man by placing facts before him in an impressive as well as a suggestive style.

"No man knew better than Fothergill how to describe a case, or a group of cases, so as to make the malady and diathesis he was describing easily recognized. He was not always absolutely correct; he often sacrificed precision to picturesqueness, his atmosphere was too clear and his distances too near. His Norsemen and Celts, Arabs and Jews, were all too perfectly typical, and either rejoiced in their splendid diathetic advantages, or groaned over their dyscrasias with too great certainty. Diet and regimen were sure to produce effects with accuracy and dispatch. Fothergill's drugs and combinations were always perfect in their results. Everything was sure to go as it should, and the weapons of his warfare always hit the mark.

"His many books testified to his extraordinary diligence at his desk. He was never idle; if he was not writing a book, he was busy with medical journalism. His connection with the defunct 'Medical Examiner' was rendered obvious by many a witty article, and to some American magazines he used to furnish page after page of special correspondence on most varied subjects; medical gossip of all kinds; personal sketches, sometimes satirical, but never venomous; long tirades about medical reform and the delinquencies of the College of Physicians; essays on diet and therapeutics—they were always readable and amusing. Indeed, Fothergill was probably better known in America than in London.

"Though Fothergill never attained a large consulting practice, yet he was commencing to found one, on the two great pillars of the confidence of his professional brethren and the gratitude of his patients. Some consultants, the very highest ones, owe their reputation and success to the confidence of the profession, the knowledge that their opinion is valuable and their conduct upright. Others, often fairly successful at first, get their work through the public by the pushing of some great or rich lady, by books well advertised, or by church connection well worked, by the reciprocal courtesies of colleagues or fellow-teachers.

"Fothergill was connected with no school, was a reformer in medical politics, and somewhat rash with his tongue on the subject of the great corporations and their heads. He had everything against him, and yet many well-known men were glad to have his opinion on their patients, and, as a rule, the patients, once they had got over the first visit, became his friends. The warmth of his heart, his obvious interest in the case, his freedom from self-seeking and greed, and the child-like innocence and frankness of his self-confidence, inspired both trust and affection—his profession was so obviously not a trade. Had he lived, his practice would have become a good one, though not a very large one.

"For some years he had suffered from diabetes, and many other symptoms which he put down to gout. A few weeks before his death gangrene of the foot came on, for which no surgical interference was possible, and the end came from diabetic coma.

"Born April 11, 1841, he was little over forty-seven years of age at his death, and many years of successful work might have been hoped for. An honest, hearty, simple soul, he had stuck to his work under physical difficulties and discouragements that would have broken many a man. A stalwart fighter, loving war for its own sake, he often lost a chance which a more cautious man would have taken, and perhaps gave offense where none was intended. Humorous, vigorous, and friendly, while any of his generation survive they will keep a warm place in their hearts for the memory of John Milner Fothergill."

The American Orthopædic Association will hold its annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme contains the following announcements: "The Modern Treatment of Chronic Joint and Spinal Disease," by Dr. Newton M. Shaffer, of New York; "Immobilization in Articular Disease" and a "Report on the Treatment of Club-foot by means of the Thomas Wrench, or the 'T. T.,'" by Dr. V. P. Gibney, of New York; "The Mechanical Treatment of Senile Coxitis," by Dr. Henry L. Taylor, of New York; "A Practical Point in the Treatment of Pott's Disease of the Spine," by Dr. A. B. Judson, of New York; "An Efficient and Inexpensive Method for the Mechanical Treatment of Pott's Disease," by Dr. C. F. Stillman, of New York; "Rest in the Treatment of Chronic Joint Diseases," by Dr. John Ridlon, of New York; "Acute Epiphysitis in Infants," by Dr. Dillon Brown, of New York; "Remarks on Lateral Curvature and its Early Treatment," by Dr. Samuel Ketch, of New York; "Osteotomy for Anterior Tibial Curves," by Dr. De Forrest Willard, of Philadelphia; "Description of an Apparatus for Measuring any Inequality in the Length of the Lower Extremities," by Dr. T. G. Morton, of Philadelphia; "Hæmatoma Oris as a Sign of Injury to the Spine in the Superior Cervical Region," by Dr. Benjamin Lee, of Philadelphia; "Two Knee-joint Excisions," by Dr. A. J. Steele, of St. Louis; "Report on Morton's Operation for the Immediate Reduction of Club-foot," by Dr. H. Hodgen, of St. Louis; "Femoral Osteotomy," by Dr. Ap Morgan Vance, of Louisville; "A Case of Reflex (?) Valgus," by Dr. George W. Ryan, of Cincinnati; "Remarks on the Operative and Mechanical Treatment of Some Joint Diseases and Injuries, with special reference to the Hip, Knee, and Elbow Joints, with Illustrative Cases," by Dr. W. R. Whitehead, of Denver; and "Analysis of Treatment of Seventy Cases of Club-foot," by Dr. E. H. Bradford, of Boston.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 10th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great

towns of England and Wales during the week ending July 21st corresponded to an annual rate of 16 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 12.2, and the highest in Preston, viz., 20.2 in a thousand. Small-pox caused 1 death in Preston, 1 in Bristol, 2 in Sheffield, and 1 in Hull. Diphtheria caused 3 deaths in Manchester.

London.—One thousand two hundred and ninety-seven deaths were registered during the week, including small-pox, 1; measles, 25; scarlet fever, 14; diphtheria, 15; whooping-cough, 33; enteric fever, 8; diarrhoea and dysentery, 62; choleraic diarrhoea, 2. Diseases of the respiratory organs caused 166 deaths; different forms of violence, 54; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.8 in a thousand. In greater London 1,589 deaths were registered, corresponding to an annual rate of 15 in a thousand of the population. In the "outer ring" 11 deaths from whooping-cough and 7 from diphtheria were registered.

Scotland.—The deaths registered in eight principal towns during the week ending July 21st corresponded to an annual rate of 18.4 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Dundee, viz., 11.3, and the highest in Glasgow, viz., 23 in a thousand. The aggregate number of deaths registered from all causes was 466, including measles, 9; scarlet fever, 2; diphtheria, 4; whooping-cough, 5; fever, 3; and diarrhoea, 12.

Catania, Italy.—Three hundred and nineteen deaths were registered during the month of May, 1888, including small-pox, 53, and enteric fever, 10.

Havana, Cuba.—Five hundred and eighty-six deaths were registered during the month of July, 1888, including yellow fever, 79; enteric fever, 15; pernicious fever, 22; small-pox, 6; and measles, 1. The sanitary inspector states that 55 of the deaths from yellow fever occurred in the military hospital, the remainder among civilians in the city. Merchant vessels at wharves on the Havana side of the harbor are being invaded by yellow fever.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Glasgow	July 21.	545,678	233	..	..	..	..	2	1	1
Warsaw	July 14.	444,814	223	..	..	3	..	..	4	3
Calcutta	June 23.	433,219	162	8	..	..	..	..	..	..
Amsterdam	July 21.	389,916	153	..	..	..	..	..	..	3
Rome	June 2.	388,300	167	..	..	..	..	2	..	1
Genoa	July 21.	179,572	93	..	..	1	1	..	..	..
Trinidad	July 7.	178,270	36	..	..	..	..	..	..	..
Trieste	July 14.	154,500	83	..	..	7	..	..	1	2
Toronto	July 30.	130,000	34	..	..	..	..	..	..	1
Stuttgart	July 21.	125,510	37	..	..	..	..	..	..	..
Bremen	July 14.	122,000	32	..	..	..	..	..	..	..
Barmen	July 14.	109,000	32	..	..	..	1	..	..	..
Mayence	June 30.	65,802	24	..	..	..	..	..	..	..
Cadiz	July 21.	65,028	43	..	..	..	..	..	..	..
Merida	July 17.	48,000	30	..	..	..	..	..	..	..
Santiago de Cuba	July 14.	40,000	44	9	..	..	..	..	..	..
Callao	July 7.	34,000	..	..	..	..	..	..	..	..
Guayaquil	July 1.	30,000	67	4	..	..	..	..	..	..
Guayaquil	July 8.	30,000	65	..	..	..	..	..	..	..
Vera Cruz	July 26.	23,800	16	..	..	..	..	1	..	..
Gibraltar	July 15.	23,631	11	..	..	..	..	1	..	1
Sagua la Grande.	July 21.	15,605	7	..	..	..	..	..	..	..
St. Thomas ..	July 6.	15,000	8	..	..	..	..	..	..	..

UNITED STATES.

Nashville, Tenn.—The health officer stated in his report dated August 4th: "We had an outbreak of small-pox July 3, 1888. Total number of cases of variola and varioloid, 11 (sent to pest-house beyond city limits). Deaths, 2. Last case occurred July 21st. Consider it stamped out."

Wheeling, W. Va.—The health officer, in his report dated August 4th, stated that "there is 1 case of small-pox in Springtown, Ohio, a river village 50 miles below here, opposite Sisterville, W. Va. A rigid quarantine exists."

Delaware Breakwater.—The brig Teneriffe was discharged from quarantine on the 7th instant. The captain and seaman remaining under treatment for yellow fever at last report have recovered and returned to vessel.

Tampa, Fla.—Dr. J. P. Wall telegraphed as follows:

August 3d: Fumigation going on at Plant City. No new cases. Dr. Murray reports no change at Manatee since yesterday.

August 6th: Was at Plant City to-day. No sick except case reported convalescent. Fumigation going on. Employed two more guards, as some parties entered at night were captured and put in quarantine under guard. All right here.

August 9th: Six suspicious cases have appeared here, all "indigenous"; diagnosis not positive yet.

Manatee, Fla.—Surgeon R. D. Murray telegraphed:

August 4th: Two cases forty-eight hours. No deaths. Twenty persons sent to pine woods. Thirty indigent colored people ask for subsistence.

To which the following reply was sent:

August 5th: Furnish subsistence to all destitute persons necessarily detained at quarantine line, but pass them outside your lines as soon as detention period is passed. Do not ration people determined to stay in Manatee.

Sanford, Fla.—Passed Assistant Surgeon John Guit  ras, U. S. M.-H. S., telegraphed:

August 2d: No cases of fever at present in city, but the suspected case required further investigation, which will be completed to-morrow.

August 3d: Case was probably not yellow fever. There appears to be no fever here, but will have to investigate further.

Under date of August 5th Dr. Guit  ras wrote as follows:

I exhumed the body of the suspected case, and performed to-day a post-mortem examination. The man died of abscess of the liver, which opened into the œsophagus, thus giving rise to hæmorrhagic vomiting. I shall write out a full report of the case, which proves to be a very interesting one. I have received all the assistance I could desire from Dr. Wyly and Dr. Caldwell. I found it necessary to make the autopsy; otherwise I should have been forced to report that I did not know what had been the cause of death.

Jacksonville, Fla.—A report having been received of the existence of yellow fever in Jacksonville, Dr. Guit  ras was directed to proceed immediately to that point and investigate and report facts. The following are his reports:

August 7th: I visited to day McCormack at the Sand Hills, where he has been carefully isolated. The case is one of yellow fever, contracted in Plant City and developed in Jacksonville. Patient convalescent. Other boarders in same house thoroughly isolated.

August 8th: Two cases of yellow fever discovered this morning. One of them had been in city six days from Orlando when taken sick. The other had not been out of city. Other 2 suspicious cases traceable to same store where the others taken sick. Health authorities are taking active steps in the matter. All cases will be sent to the Sand Hill Hospital. I fear it is the beginning of an outbreak.

There is a circumscribed focus of infection in one block in the city. Two more cases discovered, traceable to same center. County Board of Health very active in isolating all 4 patients, and some suspicious sent to Sand Hills. The board will communicate with you to-night, I believe.

August 9th: Since yesterday evening 2 cases found at the city hospital, in the outskirts of town. They have been isolated there; 1 of them can be connected with the original focus. Three other cases discovered to-day. Total, 5 new cases. We are beginning to lose connection with the original focus. The last 3 cases will probably be sent to Sand Hills, but the importance of isolation is evidently diminishing. Infected localities have been closed up, and measures for disinfection have been taken.

The following has been received from Dr. Neal Mitchell, president of the Board of Health, Jacksonville:

We shall enforce thorough isolation.

August 9th: All infected bedding and clothing burned. Five new cases to-day; disease assuming epidemic form.

Manatee, Fla.—Surgeon Murray telegraphed:

August 8th: Four new cases. Thirteen in total. One fatal case in Palmetto, across the river. No other case known or suspected.

St. Mark's, Fla.—It is reported that refugees from Manatee are landing at St. Mark's. The collector of customs at Cedar Keys has

been directed to investigate the matter. The revenue cutter on this station is disabled and undergoing repairs.

Apalachicola, Fla.—The collector of customs and the president of the Board of Health telegraphed August 9th:

Answering your message, bark Joe Read is here from Havana; "foul bill"; master says short-handed. Refused to obey orders of Board of Health to proceed to Ship Island. Crew refused duty; two men short. Master asks for cutter to tow him to Ship Island. Have no facilities for treatment if any sickness. Please answer and act at once.

To which the following reply was made:

August 9th: May hire two able seamen and pilot, if necessary; but vessel must go to Ship Island at once.

Passed Assistant Surgeon Guit  ras has been ordered to open inspection station at Way Cross, Ga., and, upon being relieved by Passed Assistant Surgeon Urquhart, will open additional inspection stations at Du Pont, Ga., and Chattahoochee, Fla. All baggage passing through these stations from places in Florida will have to be fumigated before being allowed to come further north or west.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Whooping-cough.
New York, N. Y.	August 4.	1,530,316	814	..	..	..	..	11	22	27	17
Chicago, Ill.	August 6.	802,600	441	..	..	..	..	10	5	5	7
Brooklyn, N. Y.	August 4.	793,960	409	..	..	..	..	1	6	13	2
Baltimore, Md.	August 4.	431,879	235	..	..	..	..	7	..	..	1
S. Francisco, Cal.	July 27.	300,000	111	..	..	..	..	2	..	..	..
Cincinnati, O.	August 4.	255,139	152	..	..	..	..	2	..	1	2
New Orleans, La.	July 28.	248,000	145	..	..	..	..	1	..	..	2
Buffalo, N. Y.	August 4.	230,000	162	..	..	..	..	1	..	3	1
Pittsburgh, Pa.	August 4.	230,000	122	..	..	..	..	6	3	1	1
Washington, D. C.	August 4.	225,000	130	..	..	..	..	8	..	3	10
Louisville, Ky.	August 4.	200,000	57	..	..	..	..	3	..	..	..
Kansas City, Mo.	August 4.	180,000	60	..	..	..	..	4	..	1	..
Minn'polis, Minn.	August 4.	180,000	69	..	..	..	..	2	..	1	2
Rochester, N. Y.	August 4.	120,000	64	..	..	..	..	..	..	..	..
Richmond, Va.	August 4.	100,000	49	..	..	..	..	1	..	..	..
New Haven, Ct.	August 4.	82,000	24	..	..	..	..	..	..	..	..
Toledo, Ohio	August 4.	80,000	37	..	..	..	..	1	..	..	..
Lowell, Mass.	August 6.	72,000	57	..	..	..	..	1	..	..	..
Nashville, Tenn.	August 4.	65,153	28	..	..	..	..	..	..	..	..
Fall River, Mass.	August 4.	65,000	41	..	..	..	..	..	..	..	..
Evansville, Ind.	August 2.	53,000	35	..	..	..	..	..	..	..	..
Savannah, Ga.	August 3.	52,827	17	..	..	..	..	..	..	..	..
Lynn, Mass.	August 6.	50,000	20	..	..	..	..	1	..	..	..
Manchester, N. H.	August 4.	41,000	11	..	..	..	..	..	..	..	..
Galveston, Texas	July 27.	40,000	12	..	..	..	..	..	..	..	..
Portland, Me.	August 4.	40,000	9	..	..	..	..	..	..	..	..
Mobile, Ala.	August 4.	40,000	16	..	..	..	..	..	..	..	..
Fort Wayne, Ind.	August 5.	39,000	17	..	..	..	..	..	..	..	..
Wheeling, W. Va.	August 4.	35,000	11	..	..	..	..	..	..	..	..
Burlington, Ia.	August 1.	30,166	6	..	..	..	..	..	..	..	..
Davenport, Ia.	July 28.	30,082	8	..	..	..	..	..	..	..	..
Altoona, Pa.	July 28.	29,546	11	..	..	..	..	2	..	..	..
Yonkers, N. Y.	August 4.	27,500	8	..	..	..	..	..	1	1	..
New Bedford, Mass.	August 4.	26,845	15	..	..	..	..	..	..	..	..
Auburn, N. Y.	August 4.	26,000	10	..	..	..	..	..	1	1	..
Haverhill, Mass.	August 4.	25,000	13	..	..	..	..	..	..	..	1
Newton, Mass.	August 4.	21,105	8	..	..	..	..	..	..	1	1
Newport, R. I.	August 2.	20,466	5	..	..	..	..	..	..	..	..
Schenectady, N. Y.	August 6.	20,000	9	..	..	..	..	..	..	..	..
Jackson, Mich.	August 4.	19,100	6	..	..	..	..	..	..	1	..

Change of Address.—Dr. M. C. O'Brien has moved to No. 14 Manhattan Street.

Medicine and Religion.—A London dispatch to the "New York Times" contains the following: "Dr. Gairdner, president of the British Medical Association, which met at Glasgow this week, has set the whole country by the ears through his inaugural address, which was certainly remarkable. His position, briefly stated, is that freedom from the accepted theological formul   is at the present time a primary necessity in a teacher of theology; that if a belief in Christ is to be maintained, it must be maintained on a basis at once scientific, conceivable, and credible; that the responsibility lies chiefly upon the physicians in leading the way to a new belief in a re-created Christ, and that every medical student should be first well grounded in the laws of physics before he begins to study medicine. This position is that of the most advanced materialist. It is held by many, but never has it been so flatly pronounced before. In English and Scotch intellectual circles the religious question has long been a leading problem of the time, and

it was never so widely and excitedly discussed as at present. Literally the atmosphere is permeated with theological speculation, and the only novels which attract great attention are those bearing upon it. Consequently this advanced statement from so high an authority has brought forth editorials and correspondence in nearly all the higher-class newspapers and reviews. There is little if any doubt that Dr. Gairdner has described the actual path which progressive religion is destined to follow, and that, while belief in the Bible is nowise destined to diminish, it is inevitably destined to take a new form. All those religious denominations, however, which insist that souls shall be saved in their way or not at all are not pleased, and their attacks on the address are vehement."

ANSWERS TO CORRESPONDENTS.

No. 218.—The "German brandy" of the French (*eau-de-vie allemande*) is a drastic preparation made of jalap-root, the root of *Convolvulus turpethum*, and Aleppo scammony macerated in brandy.

No. 219.—The patient should lie square on the back with the lower limbs fully extended and the feet touching each other at a point coincident with the median line of the body.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

COBALTO-NITRITE OF POTASSIUM.

PRELIMINARY NOTE ON SOME OF ITS THERAPEUTIC EFFECTS.

By J. WEST ROOSEVELT, M. D.,

LECTURER ON CLINICAL MEDICINE AT THE COLLEGE OF PHYSICIANS AND SURGEONS; VISITING PHYSICIAN TO BELLEVUE HOSPITAL; AND ATTENDING PHYSICIAN TO ROOSEVELT HOSPITAL, NEW YORK.

THE writer desires to call to the attention of the profession a drug which seems likely to prove of some value in cases where it is desirable to lower arterial tension, or to produce any of the physiological effects of the various nitrites now in use, and to sustain these effects for some time.

Dr. Wolcott Gibbs suggested to the author that cobalto-nitrite of potassium might be of value in certain cases, on the ground that its stability and relative insolubility would probably cause a slower, more uniform, and more easily controlled action than that of nitro-glycerin, sodium nitrite, amyl nitrite, or ethyl nitrite. He further stated that the salt could easily be prepared in a state of absolute purity, and would have the advantage of not being deliquescent or subject to chemical change.

When a solution of potassic nitrite is mixed with a solution of a salt of cobalt, previously acidulated with acetic acid, a crystalline precipitate is formed, varying in color from bright yellow to a dull olive shade. This salt was discovered many years ago by Fischer, and, according to Sadtler, has the formula $\text{Co}_2(\text{NO})_{12}\text{K}_6 + 2 \text{Aq}$. The salt may be considered as derived from the acid $\text{Co}_2(\text{NO})_{12}\text{H}_6$.

Acting upon the suggestion of Dr. Gibbs, the writer gave the salt to a dog, weighing about eight pounds, in a dose of five grains. No other effects than drowsiness and probably lowered tension and more rapid pulse were produced. The dose was repeated several times on different days. As there was no apparatus to measure blood-pressure at hand, no attempt was made to ascertain anything save whether the salt was actively poisonous or not. A dose of seven grains produced no symptoms in another dog of about the same size. A pregnant cat took about five grains without toxic effect. In the dogs examined there seemed to be increased speed in the pulse, and a fall in tension as appreciated by the finger. The temperature also fell from 2° to 4° F. In the absence of precise observations the experiments are of little value.

As the animals certainly suffered from no dangerous symptoms, the drug was tried in various cases in the Roosevelt Hospital. The dose usually given was half a grain every two to four hours. It was given in a few cases in half-grain doses as often as every hour. The cases chosen were those in which the other nitrites are often found to be of value. Three cases of uræmia with high arterial tension and dyspnœa, with or without signs of œdema of the lungs, were selected. In two an attempt was made to compare the action of nitro-glycerin and the new salt administered alternately in the same case. The tension, as shown by the sphygmograph or finger, fell in from fifteen minutes to an hour. The dyspnœa was wonderfully relieved in two of the cases,

and in one of these, where nitro-glycerin was given alternately with cobalto-nitrite, there was no doubt (in the patient's mind at least) that the effects were more lasting as regards the relief from dyspnœa with the latter, and that it produced no fullness, throbbing, or pain in the head, while nitro-glycerin had caused a great deal. In the other case in which the two drugs were given alternately, neither seemed to give much relief to the symptoms, and after the use of the cobalto-nitrite was begun there was vomiting. Whether this was caused by the salt or the uræmia can not be told. In the third case the salt gave absolute relief from the dyspnœa and produced neither headache nor vomiting. A fourth case of uræmia presented head symptoms without dyspnœa. Here the patient became better after taking the drug, but it is very doubtful whether this result was *post* or *propter hoc*. The improvement continued after the salt was stopped, and the patient passed from under observation.

A case of emphysema of long standing, with severe asthmatic seizures, was completely relieved of the dyspnœa by the drug, so far as the subjective symptoms or chest signs are concerned. In this case also nitro-glycerin was tried. The relief obtained by the latter was the same, but there was headache with it, while the cobalto-nitrite did not seem to cause any.* In a case of cardiac valvular disease, in which there was dyspnœa and œdema of the lungs and very pronounced albuminuria (the urine also containing hyaline and granular casts), the tension was lowered, but no positive good results were obtained. In this case the patient had vomited before taking the drug, and continued to do so afterward. Possibly the vomiting was more severe after than before. In the case of a woman, seventy years old, with somewhat thickened vessels, an attack characterized by severe headache, nausea and vomiting, very high arterial tension, restlessness, slight albuminuria, with urine of normal specific gravity, containing a few hyaline casts and rather numerous leucocytes, was relieved by chloral. This drug, when given in efficient doses, caused drowsiness. The cobalto-nitrite was substituted, tablet triturates of one fourth grain each being administered every three hours, and the same relief without any drowsiness was obtained. When the drug was discontinued, the headache, etc., returned, and relief again followed its use.

In a case of lead colic, with high arterial tension, the drug lowered this, but did not relieve the pain.

A case of mitral stenosis, with marked albuminuria, improved under the use of this salt with digitalis; but it is not possible to say what share the cobalto-nitrite had in this result.

It seems to the writer that this salt is worthy of trial in all cases where nitrites are now used. Besides the cases mentioned, he has a number of others under observation,

* Since the above was written the patient again came under the writer's care in Bellevue. The cobalto-nitrite relieved in great measure the dyspnœa, and completely abolished the sibilant and sonorous râles which at first were audible. Nitro-glycerin, in doses of $\frac{1}{100}$ of a grain, failed to produce any effect. Cobalto-nitrite, in doses of half a grain every hour, caused headache, but half a grain every two hours decidedly improved the subjective and objective signs, and caused no head symptoms.

and it is his intention to publish a detailed statement of his studies as soon as a sufficient number of cases have been observed and satisfactory experiments have been made upon animals. The experience with it so far has been encouraging. It is easily prepared, cheap, stable, and safe. It seems probable that we shall find that it lowers arterial tension, and that it does not produce so much discomfort as the other nitrites.

The effects of the drug seem to begin in about fifteen minutes to one hour after its administration, and to last (in some cases at least) for three or four hours. The average dose given has been half a grain every two or three hours. It is possible that this may be largely increased, but the fact has not been proved. It is also possible that vomiting may have resulted from its use in two cases mentioned. It seems to relieve more or less the dyspnœa of uræmia and of asthma.

The above conclusions, of course, need confirmation by further study.

TWO CASES OF REMOVAL OF UTERINE MYOMA:

ONE, SUPRAPUBIC HYSTERECTOMY; THE OTHER,
COMPLETE HYSTERECTOMY.

A New Method of disposing of the Stump.

Microscopical Examination of the Appendages.

Remarks on the Treatment of Uterine Myoma by Electricity.

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CASE I.—V. J., thirty-five years of age, had one child twenty years ago, and has been sick from that time, with constant pain and distress in the abdomen; but the last six or seven years has been the period of her greatest suffering; severe cramps several days before menstruation, pain, sick stomach, vomiting, and then would follow uterine hæmorrhage lasting fifteen days or more, leaving the patient perfectly prostrated, weak, sick, and incapable of any kind of labor. During the last three years there has been scarce a day's interval entirely free from the flow, the regular menstrual period being recognized only by the increased flow and more severe and continued cramps.

The patient called to see me first on the 15th day of last August. She said then that she had had a constant hæmorrhage, varying in quantity, since the 3d of the preceding May. I found the uterus enlarged by an intramural myoma, the tumor commencing at the internal os, suddenly increasing in size, and extending an inch above the umbilicus; the lower portion was wedged tightly down into the small pelvis. The patient called to see me once after this; she was still bleeding and growing weaker. She entered the Woman's Hospital of Brooklyn in October, 1887, in a very weak and an extremely anæmic condition. She was put immediately into bed and had the most careful nursing, the best nourishment, and constant medical attendance. She continued to bleed; was evidently growing weaker and less able to help herself; complained of great pressure and distress in the region of the bladder and rectum, the functions of which organs were seriously interfered with, so it was decided best to perform hysterectomy without delay. Accordingly, on the 15th of November, after the usual preparations, the operation was performed, with the assistance of Dr. C. N. Dixon Jones. An incision six inches in length was made in the abdominal wall. The omentum was firmly adherent in many places. After separating and tying, I passed my hand

around the tumor to free other adhesions, which were most numerous in the region of the uterine appendages. The incision had to be enlarged, and, after liberating the adhesions, with one hand under the tumor and the other with Tait's screw, the mass was lifted from the abdominal cavity. There was no little difficulty in tying off the broad ligaments, and yet there were graver difficulties in securing the uterine pedicle. First putting a temporary clamp around the tumor, the peritoneal covering was cut and the body enucleated, and many small fibroids shelled out. Then, lower down, a wire clamp was applied with Kœberlé's *serre-nœud*, still more of the mass was cut away, and more small fibroids were removed. The pedicle, thus secured, was transfixed with pins and placed in the lower angle of the abdominal wound, the peritoneal edges were brought closely around it; a drainage-tube was placed in the upper part of the wound extending to the lower part of the pelvis, and, after closing the abdominal walls, the usual dressings were applied. When the operation was finished the patient was in good condition; pulse 125, temperature 97° F. The same evening the wound was redressed, and two ounces of bloody serum drawn from the tube. Second day, dressing renewed, tube emptied three times; pulse 125, temperature 101.7° F.; urine passed naturally. Third day, same treatment, three turns given to the screw; pulse 120, temperature 101.5° F.; natural evacuation of the bowels. Her temperature now went down to 100° F.; dressings changed every day; drainage-tube removed on the seventh day, and when removed there spurted out great quantities of pus; the pus cavity extended to the stump, and the pus was in such quantity that for several days it was drawn off by a glass syringe and the abscess washed out. The patient was apparently very comfortable; natural evacuations and a good appetite. On the 15th the stump came off, leaving a healthy granulating cavity which soon healed. The patient continued to improve, gained in strength every day, and no happier face was in the hospital than that of this long-suffering woman; she said she was better and more comfortable than she had been for twenty years.

December 20th.—Wound entirely healed; patient able to sit up.

January 5th.—Patient goes around perfectly well and with ordinary strength.

May 5th and July 18th.—Patient strong and in excellent health, able to attend to her ordinary duties.

The pedicle in this case was so extremely short that it was necessary to make great traction in order to get it into the abdominal wound. I thought for a moment of adopting Billroth's management of the pedicle as I saw him proceed when I was in Vienna in the fall of 1876, and about as pictured in Gerster's late work on surgery, but the stump was so large and so low down in the contracted pelvis that this would have been attended with almost insurmountable difficulties, especially as the pedicle was composed of a portion of the tumor, and so I did not dare to trust to this method. The *ligature* was out of the question, though Thomas Keith says in the "British Medical Journal" for December 10, 1887: "The best results in hysterectomy will be got by the ligature." A few years before he had said: "Muscular tissue is ill adapted to bearing a ligature. You tie it as tightly as you can draw the threads, and in an hour or two the muscular tissue has contracted and internal hæmorrhage goes on." Emmet says in his work, p. 611: "I am disposed to the belief that there can be no likelihood of even an approximate success to that after the removal of an ova-

rian tumor until the stump can be treated with safety in the same manner by being returned to the abdominal cavity." He says elsewhere: "If myotomy was to have a future, it would have to be done by covering the stump with the peritonæum and dropping it into the peritoneal cavity." ("American Journal of Obstetrics and Diseases of Women and Children," January 5, 1885, p. 85.)

I saw Schroeder, of Berlin, manage the pedicle intraperitoneally and the patients did well, yet Schroeder's published statistics are 32 deaths out of 100 cases. Martin, by the same method of treating the pedicle, as reported at the last Medical Congress, lost 27 out of 84, while Bantock, by the extraperitoneal method, reported a mortality of 12 out of 72, and he said that with him "the intraperitoneal method has been as uniformly disastrous as the extraperitoneal has been successful." Bantock said in the "British Gynæcological Journal," May, 1886: "In every case in which he had trusted to a ligature a fatal result had ensued, and he would not resort to it again; while in similar cases treated by the *serre-nœud* he had had not a moment's anxiety." He reported at the same time a case of "a subserous tumor which sprang from the fundus by a fleshy vascular pedicle an inch and a half long and an inch and a half by two inches in diameter. He first firmly compressed the pedicle by large powerful forceps, then transfixed and tied the pedicle with a figure-of-eight loop, and then firmly encircled the whole pedicle with another ligature. The tumor was cut away and the peritoneal edges were brought together by a continuous suture. Scarcely was this finished when it was evident that the ligatures were loose, and he was obliged to apply the *serre-nœud* and keep the stump outside." In his late address in Philadelphia* he remarked: "The uterine stump, under the pressure of a ligature tied with as great a strain as it will bear, yields before the compressing force so that in a few hours the ligatures may be quite loose, and that when he had so treated the pedicle of a tumor which may have sprung from the fundus, or some part of the free surface of the uterus, out of five cases so treated, only one was successful."†

Matthew D. Mann reports in the "Am. Jour. of Obstetrics and Diseases of Women and Children," May, 1887, a case where a tumor was attached to the fundus uteri by "a small, short pedicle. Tempted by its smallness, I ligatured it with silk, pulled it very tightly, and asked my assistant to try after I had exerted my utmost strength. In a few hours there was internal hæmorrhage, the patient was pulseless and profoundly collapsed, and was saved only by the use of the clamp; the silk ligatures had slipped entirely off, and were never found." Dr. J. C. Renton reports a case: Pedicle was first treated with silk ligature, hæmorrhage supervened, the abdomen was re-opened, and the pedicle secured by Kœberlé's *serre-nœud*. Dr. S. C. Gordon, of Maine, reports two fatal cases of hysterectomy, 1871-1883; ligature to the pedicle in both cases. Dr. E. Muller, of South

Carolina, reports a fatal case; ligature and stump returned to the abdominal cavity.*

Gerster, in his work on surgery, says of a case of hysterectomy: "The smallness of the stump induced the author to treat it like an ovarian pedicle, and it was replaced in the abdominal cavity after securing the elastic ligature by a knot of strong silk." The further record is: "The author's only case of supra-vaginal hysterectomy ended fatally by septicæmia." Lawson Tait, in the "British Medical Journal," December 17, 1887, says: "I have already placed on record the fact that my mortality in hysterectomy was largely due to efforts to develop the intraperitoneal method of dealing with the pedicle, and my recent success is due to using the clamp entirely." Thomas said "he had removed the uterus from seventeen patients; nine of them had recovered, and the remainder had died. A large number had been treated by the clamp, and they had done remarkably well. A smaller number had been treated by simply returning the pedicle, and they had done badly."† Dirner, of Budapest, Hungary, speaks in favor of the extraperitoneal method, "as it prevents hæmorrhage and sepsis more completely than the other method." Greig Smith‡ says: "The dangers of the intraperitoneal treatment are nearly twice as great as the extraperitoneal."

But, even when the stump is treated extraperitoneally, there are many dangers and may be much trouble, as an operation, performed, September, 1887, by one of the most distinguished living gynæcological surgeons and at a center of gynæcological science, the record is death on the seventh day "from pus cavity on one side of the pedicle." The pedicle, when treated extraperitoneally, becomes almost a foreign body, oftentimes a putrid mass; the odor that is sometimes perceived tells how danger is lurking around. Greig Smith puts it as pleasantly as possible when he says: "The part of the pedicle beyond the wire or ligature is removed by pressure necrosis. A sort of dry gangrene, which is not entirely putrefactive and which does not set loose foul discharges; is sought to be produced." We may seek to produce the best conditions, but there are still foul septic discharges, and, if the patient recovers, it is only the question of escaping the many dangerous possibilities. At best the stump is a hard, fibrous mass, extending from the vaginal to the abdominal walls, and pulling upon both. In this case I have reported the traction upon the abdominal walls was so great that it made a considerable sink or depression in the surface, and caused such pressure from the pins that, notwithstanding every care and all possible disinfection, keeping constantly fresh gauze under the pins, yet beneath them the skin sloughed, and with all this there were the threatening dangers of sepsis, abscess, etc., from the decaying stump. Is a course of procedure the wisest that is necessarily accompanied by, or may encounter, such grave conditions? What is the good of preserving the stump intraperitoneally or extraperitoneally? It is only the remnant or remains of a sickly womb, and can be of no service and

* "Medical News," November 19, 1887.

† In London, September 29, 1886, I saw Bantock remove a large fibroid which was attached to the fundus by a short, soft pedicle. The pedicle was secured by Kœberlé's *serre-nœud* and placed in the abdominal wound.

* Bigelow, "Am. Jour. Obstet."

† "Am. Jour. Obstet.," January, 1887.

‡ *Opus*, 2d ed., 1888.

may do much damage—how much, who can tell?—not only at the time of the operation, but in the subsequent history of the patient. One case is reported in which “within a year cancer developed in the remains of the cervix, and proved fatal.”

In both methods of operation, extraperitoneal or intraperitoneal, it is the stump that makes the difficulty; it is the source of most of the danger, and statistical history shows that the great mortality of this operation is due almost entirely to unfavorable conditions originating in, or generated around, the stump. Emmet reports a case, *op.*, p. 614: “The stump was almost all cut away, leaving only enough of the cervical tissues to hold the ligatures from slipping off, and it was so covered as to be placed outside of the peritoneal cavity, yet on the fourteenth day the patient died from rupture of an abscess.” This distinguished operator says further: “I have removed the whole or portions of the uterus in five instances, and, notwithstanding the greatest care to insure a favorable result, all the patients died, sooner or later, from *blood-poisoning* generated about the stump.” Shall we say it is a safe method when it is so frequently fatal in the hands of our best operators? It is not the operation, or the method of operation, but it is the danger which is *inherent in this method of procedure*.

When I presented Case I of this paper to the New York Pathological Society, November 23, 1887, I stated that I believed a better and more natural procedure would have been, after opening the abdominal walls, being assured of the condition of affairs, and liberating any adhesions that might exist, then to have severed the vaginal connections, as in kolpo-hysterectomy, and to have removed the entire uterus. Or, if the body of the tumor or uterus was removed through the abdominal incision, then to remove the uterine stump *per vaginam*, and, after “*la toilette du peritoine*,” close the abdominal walls, and *leave the vaginal opening, as the best and most natural way of drainage*.* I also gave in a few words the following reasons: This procedure would

1. Have very much shortened the operation, as most of the time was taken up in securing and placing the stump.

2. There would have been less shock to the patient. Certainly, to cut through such an organ as the uterus must cause a more profound shock than severing the vaginal membranes; besides, the constant traction of the pedicle makes a *continuous* shock. At the end of the second day after the operation there were more evidences of shock in the patient than at the close of the operation, which, no doubt, was due to the strain and nervous tension caused by the constant pulling of the pedicle.

3. This mode of procedure would very much lessen the dangers of the operation, not only in diminishing the shock and shortening the time of the operation, but principally that it *gets clear of the stump, et tous ses douleurs*.

4. The patient would make a more rapid recovery. The vaginal wound will heal very much more quickly and naturally than the encircled stump, and will be attended with less complicating difficulties; besides, it seems to be *nature's natural outlet*. Two weeks after the abdominal hysterectomy

I performed in the Woman's Hospital a vaginal hysterectomy for cancer.

The patient not only had a tainted constitution, but was weaker and feebler than the last patient; was not able to sit up and had to be carried to the operating-table. Kolpo-hysterectomy was performed on the 28th of November, and the patient was able to be out of bed on the 15th of December, stronger than before the operation, gradually gaining strength; on the 23d of December left the hospital apparently well, and since has been able to assume the charge of her large family. The case of abdominal hysterectomy was performed on November 15th, but, on account of the conditions consequent upon the treatment of the pedicle, the patient was not able to be out of bed until the 20th of December, or to leave the hospital until the 20th of January.

Description of the Tumor.—All that was apparently left of the uterine structure was the thin layer of muscular fibrous tissue, half an inch in thickness, which surrounded and held tightly and firmly a mass of fibroid growths—held them so firmly and compactly that one feeling on the outside could not have imagined that it was not one solid myoma. Between the tumors there were only thin layers of musculo-fibrous tissue; thus the uterus was scarcely more than a thin sac, with intervening structures for holding these tumors.

The Uterine Appendages—Macroscopical Appearance.—The right ovary was small, measuring an inch by an inch and a half, shriveled and cirrhotic in appearance, and incased in a mass of adhesions. When the ovary was cut open, almost the entire portion was occupied by a single cyst; only a thin wall of ovarian tissue remained.

Microscopical Examination.—The pseudo-membrane around the ovary was crowded with inflammatory corpuscles, and in it were found many newly formed and enlarged blood-vessels resulting from the peri-oophoritis and localized peritonitis. The ovary showed chronic oophoritis with acute relapses, or was in a state of subacute oophoritis. Much of the ovarian tissue was entirely broken down into inflammatory corpuscles; in some places the inflammatory corpuscles were changing to fibrous connecting tissue, and in other places this new fibrous connective tissue was again breaking down into inflammatory corpuscles. No doubt in the frequent attacks of oophoritis in the twenty years of suffering the fibrous connective tissue had been repeatedly broken down into inflammatory corpuscles, and then as repeatedly changed to fibrous connective tissue.

The wall of the cyst was composed of different layers of inflammatory deposits. The innermost layer was in a state of intense inflammation; in the next the inflammatory corpuscles were changing to fibrous connective tissue, and this layer gradually passed into a broad layer of new fibrous connective tissue, which in some places extends to the periphery of the ovary, and this new fibrous connective tissue was again breaking down into inflammatory corpuscles and joining the inflamed pseudo-membrane. In one place there was a narrow portion of normal cortical substance, and in this little island, amid the sea of desolation, are seen securely lodged three normal ova, but no possible chance for these little life-cells to ever fulfill their physiological destiny; yet Nature always does her best to perform a function or to perpetuate life.

While in many places severe inflammation extended to the periphery, the most intense inflammation was near the pelvis, where many of the arteries show arteritis and endarteritis, some entirely obliterated, others in a state of waxy degeneration, the endothelium being changed to fibrous connective tissue.

The left ovary is only a thin membranous sac, half an inch in diameter; under the microscope this proves to be a cyst wall

* “Medical Record,” December 24, 1887.

with different layers of inflammatory deposits; no normal ovarian tissue and no ova were seen. The Fallopian tubes, when examined under the microscope, are like sacs flattened out by pressure; the thin walls contain a layer of newly formed epithelial cells which are filled with inflammatory corpuscles. The folds of the mucosa have entirely disappeared. This pathological condition of the tubes gives evidence of long-continued chronic disease; probably at one time it was hydrosalpinx.

CASE II.—H. S., a Swede, called to see me on January 17, 1888. Forty years of age, twice married; lived with her first husband fourteen years, with the last has lived three years; never had any children. The menstrual periods recurred every two or three weeks, lasting from eight to ten days, the flow hæmorrhagic. Examination showed a uterine myoma extending from the cervix to an inch of the ensiform cartilage, and larger than the uterus at term. The lower portion of the tumor was hard and firm, filling tightly all the space between the cervix and pubic bone, pushing the cervix far back and up, from which position it could not be moved in the least, and it was quite as impossible to pass a sound into the uterine canal. Beneath this portion of the tumor the bladder spread out; a sound in the bladder passed directly down to the cervix.

The growth had evidently existed for many years, but was becoming more and more a source of distress and oppression, exhausting her by its own weight, interfering with her breathing, and was such a burden that she could with difficulty turn from side to side in bed, and frequently had to rise from her bed and stand up to find relief. Its enormous size incapacitated her for any kind of employment; she could not bend over, and if she was much on her feet the pressure gave her neuralgic pains in her limbs, of which she has frequently had most severe attacks, "rolled on the floor in agony," and found relief only by hypodermic injections of morphine. From time to time she has consulted several well-known practitioners. They all told her the tumor could not be removed; that the attempt to remove it would cause her death.

She said she would rather die than endure the constant torment; that "often she has felt that she must kill herself." She was ever conscious of its presence; waked at night with a distressed agony of mind only to find it there. It was such a mental distress that even her well-balanced mind and strong nervous system seemed ready to give way. She was becoming a wreck mentally and physically. Her emaciated body was only a framework to support and transport the growth. Naturally a strong, vigorous woman and from a long-lived family, now, at the age of forty, she is old and worn out, reduced in health, strength, and flesh, and is failing rapidly. Her husband says she has failed more during the last six months than for three years previously.

Some say "such tumors do not kill, that they have a limited active existence, and of themselves they rarely shorten life," etc. Certainly in this case the tumor was killing the patient, rapidly exhausting her life-powers, interfering with every vital function, and rendering every organ abnormal. It had existed for many years and was still in a state of active growth. Emmet tells the history of many when he incidentally remarks of one of his patients: "The tumor gradually increased in size, and in a few years after she died of exhaustion."

Two or three years ago a young woman about thirty-seven years of age placed herself under my care. I found a uterine myoma, six to nine pounds weight, closely wedged into the pelvis and growing upward and backward; a fistula had opened from it into the colon or rectum, and she was obliged to take morphine to control the action of the bowels. Examination of the kidneys also showed serious disturbances, probably from pressure. Even at that time, though she was still so young, yet

such injuries or bad conditions had the tumor produced that the case was then considered hopeless—*too far gone for an operation*. Professor B. F. Dawson, who kindly saw the case with me, coincided in that opinion; so also did Dr. Charles Lee. A few weeks ago this same patient called again to see me. General ascites had developed, the action of the bowels was scarcely controlled by large daily doses of morphine, and the growing tumor had caused yet more severe nephritis. The woman was certainly dying of the fibroma,* and hundreds of others have died from the same cause, even though the name of some incidental disease may have filled the death certificate.

I have another case, a larger tumor, but it grows up into the abdomen, consequently does not work as much evil or give as much distress; and though this patient also is in the prime of life and has a strong, vigorous constitution, yet the tumor even now renders her almost helpless. If she works a little she must lie down and rest; she suffers pain, the tumor exhausts her, and is rapidly doing its fatal work.

Mann says: "That fibroid tumors do cause death even before reaching a great size, I have had several opportunities of observing. When they by their presence, through pain and suffering were gradually wearing out the life of the patient, and making that life, while it did last, not worth living."

I do not believe a woman can have a uterine fibroid, however small, without having direct and sympathetic troubles, for the tumors not only may produce various uterine misplacements, with the accompanying evils and distresses, but they encroach upon normal structure, derange, change, and destroy it, disturb normal functions, are a constant irritation to the organic system of nerves, and, by sympathetic troubles and reflex conditions, the injuries they produce are more than we can measure or calculate; they render the whole being physically and morally incompetent. Nature is intolerant of them, and the patients are worn out by the disorders resulting from the fibroids. Greig Smith says: "They set up great irritation of the uterine mucous membrane." Professor Rose, of Berlin, says: "By their large size, they encumber the thoracic organs in their functions. Dilatation of the right ventricle results, with also atrophy of the diaphragm. Repeated attacks of ascites bring orthopnoea and danger of death from asphyxia." Thomas says: "They in some way interfere with hæmotosis and the functions of the ganglionic nervous system. They disorder the mind, produce dangerous mental depression and anxiety, and disturbance of the functions of nutrition and secretion, which slowly drag the patient down to death." Goodell says: "Nothing worries a woman more than the discovery of a tumor in the abdomen. By sheer brooding I have seen one woman become insane and another go into a decline." A pregnant woman has to carry her burden only a few months and all the time with a happy idea, an assured prospect, that it will soon end and she will have inexpressible joy; she is happy and comforted; her very soul holds communion with the little being, yet even for that short time, and with such joyful anticipations, she is wearied

* At one time the patient could have been cured by hysterectomy and before that a yet simpler operation might have saved her years of suffering; but now its continued growth will soon end her life.

and worn out with the burden; but a woman with a fibroid tumor—ah! she has all the time the *dead* burden. No hope of relief, no anticipation, only a sickening prospect, gloomy forebodings, and the saddest of possibilities! "Such a misery," said to me a patient who had carried the burden for many years, "let people who say it is nothing, carry it for one week!"

H. S. was admitted into the Woman's Hospital of Brooklyn, February 5th. Operation performed February 16th. As she lay on the operating-table under ether, the body seemed a mere skeleton; the monstrously large and nodulated tumor filled the whole abdominal cavity, extending up to and under the ribs. A small exploratory incision was made first midway between the umbilicus and down to the pubes. I passed my hand in and around to free adhesions, then by the help of Tait's screw, with the left hand beneath, the mass was lifted out of the abdominal cavity. The right tube was greatly enlarged, presented the appearance of a coiled-up and adherent mass of intestine; the left tube was also adherent, its fimbriated extremity closed, and the tube filled with pus. The broad ligaments were tied off and the temporary rope clamp* thrown around the tumor, a great portion of which was cut away, then Kæberlé's clamp was screwed on lower down, when other portions of fibroids were enucleated. The pedicle, thus secured, consisted of a mass of tumors, one of them three inches in diameter, all closely packed, reaching to the cervix. I knew that to make a pedicle of the mass would not only endanger the patient's life, but render the operation unfinished and imperfect, so I decided at once to proceed as in vaginal hysterectomy for the removal of this portion. Dr. Charles N. D. Jones took charge of the abdominal wound, temporarily closed and covered with aseptic gauze, and greatly assisted me by forcibly pushing down the cervix with the contained tumor. I separated the vaginal attachments, carefully preserving the bladder and ureters intact. Still the large size of the tumor would not allow it to come down sufficiently to secure the broad ligaments, so while I was clamping the vaginal opening I requested Dr. Jones to clamp the broad ligaments from above. The size of the tumor rendered it necessary to deliver it through the abdominal opening. The large forceps which clamped the broad ligaments were left on, projecting through the abdominal wound; by the side of these was placed the drainage-tube. Several smaller forceps were left in the vaginal wound, the peritoneal cavity was washed out, the abdominal wound closed and dressed, the vaginal wound left open for drainage and treated as in vaginal hysterectomy.

By thus removing the cervix, or the entire uterus, we not only got clear of the stump, but of the great mass of loose tissue which surrounded it and which, if it had remained, would doubtless have produced the most serious consequences, and which is probably an explanation of why the report has so frequently to be made of death on the ninth, twelfth, or fourteenth day from abscess near the stump. I do not see how in this case, with every precaution, the formation of an abscess could have been prevented in so much loose tissue. Even if all the fibroids had been enucleated there would still have been a great pocket of loose tissue. Schroeder says: "The difficulties of the case become very numerous when we have to remove a fibroid developed in the lower part of the uterus and extending into

the cellular mass of the pelvis. If the tumor is enucleated there remains a cavity. If I do not expect a very abundant secretion from it I leave the walls of the cavity simply to close upon each other and drop the whole into the abdomen." Possibly just such cases increased Schroeder's mortality list.

It was marvelous in this case to see how much more rapid was the convalescence of the patient than it would have been had not the stump been removed. Case I, reported in this paper, with the stump in the abdominal wound, looked as she lay in bed as if she was constantly held down by a ton weight which made her almost helpless and motionless; but this patient, pinioned by no stump, moved easily from side to side, was extremely light and agile in all her movements, actually got out of bed on the seventh day (without our knowledge, however) and after the eleventh day could sit up occasionally, and when necessary go to the water-closet. Keith says: "The average time of convalescence in the extraperitoneal cases was forty-one days; of the intraperitoneal method, three weeks." This patient was practically well on the twelfth or fourteenth day, had an excellent appetite, and had gained in flesh and strength. No such results could possibly have been secured if the stump had been left.

On the eighth day the patient menstruated, the blood seeming to ooze from the internal surface of the vagina, and the flow lasted five days. The tumor weighed thirteen pounds and a half. Nothing apparently was left of the uterus except the little undeveloped cervix and the comparatively thin layer of fibro-muscular tissue which surrounded the mass of tumors, and held them so firmly and solidly that, even on closely examining the naked tumor, there was no other appearance than one solid formation.

On cutting the capsule or thin wall of the uterus, the great mass unfolded itself, and to have crowded it back into the same compass would have been an impossibility. The upper third was an oblong solid tumor, measuring $9\frac{1}{2}$ inches in diameter, and there was a mass of separate, round, solid tumors, measuring $2\frac{1}{2}$, $3\frac{1}{2}$, or 4 inches in diameter. One tumor, $3\frac{1}{2}$ or 4 inches in diameter, filled the space commencing at the internal os, leaving, so far as could be perceived, not the least trace of a uterine canal, and agglutinated to this were several smaller fibromata; this was the mass that on first examination was perceived in the pelvis, and which pushed the cervix far backward and upward and prevented the entrance of the sound. It was also the mass that was finally removed by separating the vaginal attachments and broad ligaments.

The Appendages—Macroscopical Appearance.—Right tube measured ten inches in length, was coiled upon itself, and filled with bloody serum. The closed, fimbriated extremity was four inches and three quarters in circumference. Left tube, five inches in length, was filled with pus, and its closed, fimbriated extremity was adherent to the left ovary. The right ovary was atrophied and hidden in the folds of the right tube; the left ovary was much enlarged and contained a hæmatoma two inches in diameter.

Microscopical Examination—Right Tube.—The wall of this tube consisted almost entirely of dense, fibrous connective tissue, its muscle being transformed into this tissue. A few remnants of muscle fibers had become waxy, and were breaking down into inflammatory corpuscles.

The epithelium of the mucosa had entirely disappeared;

* Dr. C. N. D. Jones's modification of Tait's temporary clamp. See "New York Medical Journal," June, 1888.

no remnants of it were left, as it was entirely changed to fibrous connective tissue, almost cicatricial. There were many newly formed blood-vessels with thick walls, and the newly formed fibrous connective tissue was crowded with inflammatory corpuscles.

The left tube was five inches in length and filled with pus. Almost the entire muscular structure of this tube also had disappeared or was changed to fibrous connective tissue, and this new tissue was crowded with inflammatory corpuscles which, in many places, formed abscesses. The few scattered bundles of smooth muscle left were in a state of intense inflammation and beginning ulceration.

Also, in the left tube, the epithelium of the mucosa was entirely destroyed and the mucosa was crowded with inflammatory corpuscles. Only a few blunt remnants of the folds of the mucosa were left, and these were in a state of intense inflammation. Amid these thickly crowded inflammatory corpuscles were seen in every part coarse bundles of fibrous connective tissue, showing that the mucosa had previously been invaded by a plastic inflammation of which probably there had been repeated attacks. Also in the mucosa, or in the previously formed tissue, there were seen many newly formed blood-vessels.

The ovaries also gave evidence of extensive changes from long-existing disease. Not a vestige of normal ovarian structure was seen, nor could an ovum be found in either ovary. Though the pathological changes showed long-existing chronic disease, yet portions of the ovary were in a state of acute inflammation.

There must be some connection in the way of cause and effect between disease of the uterine appendages and a fibroid tumor or uterine myoma. In both of the cases here reported the disease of the appendages had existed many years—probably twenty. Both patients were sterile for that length of time. The fibroid in each, twenty years ago, was small, probably did not exist, and *would not, in either case*, have been a cause of sterility, nor could it in either case have produced the disease of the appendages; but the disease of the appendages, which was probably acquired in early married life, would have produced the sterility, and probably had such a disturbing effect upon the nutrition and circulation of the uterus that *it may in each case have caused the growth of the tumor*. If the prepuce is narrow, the prostate may be obstructed, and an enlarged prostate may produce kidney disease. May not an obstructed or diseased tube have equally a disturbing effect upon the nutrition of the uterus?

Of two cases of myofibroma of the uterus, the histories of which I reported not long ago,* one had an intermural tumor, the other had two subperitoneal fibroids. Both women had been sterile for eight or nine years. Both had had disease of the uterine appendages for about that time—one, chronic ovaritis and pyosalpinx; the other, chronic ovaritis and interstitial salpingitis. The fibroid in either case eight years ago would not have caused the sterility; they were at the time very small, if they existed at all; but the disease of the appendages would have caused sterility, and quite probably this disease of the appendages caused during this period the development of the fibroid.

Yesterday, July 16th, a woman called to see me suffer-

ing from a uterine myoma, very large and filling the pelvis, and one large movable subperitoneal growth. She is forty-four years old, has been married twenty-four years, and never has had any children. Since marriage, menstruation has always been accompanied with pain—pain commencing two or three days before the flow, showing that it was due to the diseased appendages. In this case also we see that a possibly small fibroid twenty-four years ago would not have caused the sterility; probably no fibroid existed at the time, but the sterility would have been caused by the disease of the appendages, which did exist at that time, and that this disease of the uterine appendages may have caused the growth of the uterine fibroid.

In almost every reported case of hysterectomy for uterine myoma, when the appendages are referred to, they are mentioned as being in a state of disease, and in many instances when they are supposed to be normal the microscope would doubtless reveal a condition of long-existing disease and degeneration. Mann, speaking of a case of hysterectomy for fibroid tumor, says: "There was no chance of removing the ovaries, as they were bound down in a mass of adhesions." Drysdale, reporting a case of hysterectomy, says: "Beneath, the uterine tumor was adherent to the broad ligaments and the ovaries." Martin says of a case: "Ovary adherent; dropsy of the Fallopian tubes." Dr. M. Price reports of one of his cases: "Double tubal and ovarian disease." Professor Ed. Rose, of Berlin, says of a case: "The right tube was adherent to the right side of the pubis, fixing the uterus, and contained an intra-canalicular hæmatoma." In every instance in which I have removed the uterine appendages for a bleeding fibroid I have found the appendages so much diseased that, on that account, their removal was desirable. In removing the uterine appendages for diseased conditions, I have frequently been surprised to find in almost every instance the uterus enlarged more or less, either from hyperplasia or an incipient fibroid growth, more likely the latter condition—are they similar in nature?—and the removal of the diseased appendages not only prevented the evil which their diseased condition would do the health, constitution, and general system, but also the injury they would do to the *uterus itself, in changing its structure or developing a fibroid growth*.

The question may be suggested, Why not have tried electricity or Apostoli's method in these cases? I reply: 1. It would probably have been attended with equal or more danger. 2. The results would have been more uncertain and more incomplete.

We can not think of electricity being so harmless and inoffensive when Apostoli calls it "a double-edged agent," and says "the negative pole is a dangerous weapon, having strong power of producing congestion," and that "the manipulations in the operations of galvano-puncture will always be dangerous in incautious hands."

W. S. Playfair says: "It is a very double-edged weapon, and capable of doing much harm."* Woodham Webb says: "The negative pole has dissolvent and destructive

* "Medical Record," Nov. 23, 1886. "Am. Jour. Obst.," March, 1888.

* "Brit. Med. Jour.," January 11, 1887.

powers," and "When the cavity of the uterus can not be reached by a sound, pass the disintegrating current through the diseased structure, and new punctures may be made from time to time on suitably presenting parts of the tumor." "New punctures!" Do we recognize the gravity and imminent danger of such a proceeding? The "British Medical Journal" well says: "Every application of electricity may be looked upon as a major operation." Apostoli says further, in his address before the British Medical Association: "All the attempts of his predecessors in the electrical cure of fibromata were defective in ways; the current was set in motion in ignorance of its intensity and with an imperfect knowledge of the best means of employing it, and by a method often dangerous from the galvano-puncture being made above the pubes and through the abdominal integument." W. Webb, who pursues a parallel line of thought with Apostoli, says: "The intensity of the current they put in action was insufficient, uncertain, and insecure, and, in the hands of all who tried it, the operation was painful, dangerous, and empirical." Engelman gave expression to the same thought before the American Gynecological Society in 1886, saying: "The electrical current was used without any knowledge of its greatly varying quantities, and without any knowledge of dose." A writer in the "Medical Record" of July 7, 1888, in an article favoring "The Treatment of Uterine Fibroids by Apostoli's Method," says of the old treatment: "It was purely empirical and wholly unscientific."

Apostoli continues: "With these imperfections and dangers in view, I originated a new and rational way of using electricity, for the purpose of employing high intensities of current and enormity of doses, either in the cavity of the uterus or the substance of the fibrous deposit."

But this "new and rational way" seems very similar to "the old defective ways"; it employs the same "galvano-puncture made through the abdominal integument," which Engelman says is "invariably accompanied with danger and suffering," and from which, he says, "have occurred cases of peritonitis, perimetritis, and death"*; and it employs the "bare metal electrode in the cavity of the uterus," by which, as A. D. Rockwell says, "it is possible to inflict much damage," remarking "that it can not often be necessary to deal so heroically with the delicate tissues in the interior of the uterus."† W. H. Baker says that in some conditions "the sound in the cavity of the uterus is exceedingly dangerous"; and Engelman also says that he "would not advise it," and that he had "not followed Apostoli's method, for he had made prominent the use of the sound in the cavity of the uterus." Of "high intensities" the writer in the "Medical Record" just quoted says: "This enormous dosage is liable to do great harm, and for the average American woman it is too high"; and then he gives various other directions, which, as he says, "are entirely at variance with Apostoli." The advantage of "high intensities," according to one writer, is "the saving of time, and thus making electricity of service in pauper clinics."

Even with this "new and rational way," "of high intensities and enormity of doses," we still think the dangers attending "galvano-chemical cauterization, intra-uterine or parenchymatous," may be greater than a surgical operation for the removal of a myoma. There is the same danger of infection, danger of shock from sudden interruption of the current,* danger of hæmorrhage, danger of inflammation,† danger of unseen internal injuries, of wounding the intestine, the peritonæum, or some larger blood-vessel; "the risk," as Apostoli says, "of opening a vesico-vaginal fistula, or wounding an important vessel." The needle may go where, and puncture what structures! It is working in the dark. Apostoli advises, "in case of any unusual hæmorrhage, immediately dilate the vagina with the expanding speculum, and, if necessary, put forceps on the bleeding part"; but, before "the vagina can be dilated by the expanding speculum," a wounded artery in the abdominal cavity may be rapidly pouring forth its flood-tide of life.

Then, again, there are the untold dangers from what they call "the disintegrating process, or ulterior changes," produced by that "dangerous weapon, the negative pole." Apostoli asserts that "it sets up a subsequent process of disintegration." How wide, or how lasting, or how fatal? What power controls it? Who can set bounds to it, and say "Thus far"? Who can keep its destructive disintegrating process *inside* of the tumor? And, if this current can check the growth and "disintegrate" the solid fibroid, how much more may it affect neighboring and finer structures! It is "dissolvent and destructive"; may not the intestine be internally injured thereby?‡ We set the force at work; it is out of sight, and among the living structures! What is it doing, and how does it act? Baker says: "My opinion is that electrolysis establishes an interstitial inflammation of the connective tissue." If it does, it produces a sad condition. And has the operator the power to limit or end, when and as he chooses, this "interstitial inflammation"? Baker says further: "And in its resulting cicatricial contraction the muscular fibers are compressed, so that fatty degeneration occurs, then absorption, and the growth diminishes." "A happy combination!" as Mark Twain says.

Another writer asserts that it is by "uterine contractions and gradual shrinkage by compression and malnutri-

* Certain conditions may suddenly interrupt the current and cause a severe and dangerous shock.—"Brit. Med. Jour."

A shock would inflict damage on many.—A. D. Rockwell.

Shock caused by the sudden making or breaking a current may prove quite serious.—Engelman.

† Hæmorrhage may be caused by careless puncture or by injudicious use of the negative pole; inflammation may follow the use of strong currents injudiciously applied to sensitive parts.—Engelman.

‡ Since writing the above I have noticed the following case reported as treated by galvano-puncture: At the autopsy "the larger lobe of the fibroid was cut open; it displayed a uniform surface, white and cartilaginous; no marks or traces of the electrodes that had repeatedly penetrated the growth. The evidences of general peritonitis were very marked; coagulated lymph, partly organized, was plastered over the tumor and intestine. Portions of the intestine were almost black and gangrenous." Thus the finer structures were more affected than the tumor.

* "American Gyn. Trans."

† "New York Medical Journal," November 12, 1887.

tion of the tumor."* Franklin H. Martin, in explaining the action, says† that "he believes that electricity, powerfully concentrated in passing through the tissues, has some destructive effect on the trophic nerves, or nerves that carry trophic influences, thereby cuts off the power of nutrition in the tissues, and causes progressive or rapid atrophy of the tissues under their control." Why may not the "atrophic" effects of the current affect the trophic nerves of the carrying blood-vessels, and exert destroying or atrophic influences on the finely constructed intestine? How do we stay the force? Is there a landmark or a demarkation beyond which it shall not pass? Again, we are told that "the stanching effect from hæmorrhage is due to the cutting off of the supplementary circulation."‡ Why may it not cut off the supplementary circulation of other structures? How can it "atrophy," or have some destructive effect upon the trophic nerves, and affect the "supplementary circulation" only of the hard, insensible tumor, and not similarly affect neighboring vital organs?

(To be concluded.)

REMOVAL OF A SPINA BIFIDA WITH THE KNIFE.

RECOVERY.

By Z. H. EVANS, M. D.,
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On March 27, 1888, I was called to see the six-year-old son of G. F., who was suffering from a spina bifida of the size of an orange, involving the second and third lumbar vertebræ (Fig. 1). He also presented the club-feet so often seen in connection with this deformity. His physical development and general condition otherwise were all that could be desired. During the conversation with the mother she remarked that this disease was peculiar to the family; that two of her sisters had given birth to children with spina bifida, her child being the fourth. Upon examination of the tumor, I found it attached by a broad base and quite painful on pressure, especially on the left side. There also existed at the base of the tumor on the right side a small opening through which pus was constantly discharged, rendering a



FIG. 1.

dressing necessary two or three times daily in order to keep the parts clean and free from smell. A probe passed into this opening came in contact with dead and detached bone. After enlarging the opening sufficiently to admit the finger, it was found

that the sac was lined throughout with small scales of bone, and contained necrosed tissue. This accounted for the discharge of pus and led me to believe that I had encountered one of those rare cases of false spina bifida in which Nature had so far effected a cure as to close the opening in the spine and cut off all communication with the cord. I therefore deemed it advisable to remove the tumor, with the view of freeing the patient from the annoyance of the constant discharge of pus.

On the 17th of April, with the assistance of Dr. Carrow, Dr. Minar, Dr. Hoxter, and Dr. Elliott, the operation was begun by making an incision on the right side of the tumor well down its base. A similar one was then commenced on the left side, but the knife had only passed through the skin when a smart flow of spinal fluid occurred, convincing all present that instead of a false spina bifida, we had a true one to deal with. The removal of the tumor was accomplished as quickly as possible, and we found on examination that it contained two sacs, that on the left side containing the meninges of the cord and having an opening of the size of the end of a lead-pencil leading down to and through the cleft in the spine, which was large enough to admit the end of my thumb and exposed the cord to view; while that on the right was occupied by small fragments of bone, pus, and necrosed tissue. Four deep sutures were now passed and made to include the spinal membranes on either side, so that when drawn up they would bring the opposite surfaces of the wound in close apposition, our hope being in this way to secure plastic union—a result much to be desired. A large pad of cotton was now placed over the site of operation and held in position by means of a wide flannel binder. The shock from the operation was so great that it was necessary to keep the patient on the operating-table, with his feet elevated, for nearly an hour, and to administer frequent injections of brandy. His pulse and respiration gradually improved and he was placed in bed surrounded by warm woolen blankets, and bottles of hot water were applied to his feet. Much to my surprise, I learned from his mother the next morning that he had slept well through the night without anodynes and had eaten his usual breakfast. The patient continued in this condition until the morning of the third day, when he was seized with convulsions, which lasted, however, but a short time. Bromide of potassium, in five-grain doses, was ordered to be given every two hours in the event of a return of the convulsions; but as they did not recur the drug was not administered. Owing to a constant discharge of spinal fluid, it was necessary to change the dressing of the wound night and morning, thus retarding the healing process. The discharge continued for about three weeks, after which period it gradually grew less in quantity as the wound contracted, filling in the opening in the spine with the products of inflammation. Three months have now elapsed since the operation was performed and the patient has completely recovered from its effects (Fig. 2). His back is entirely free from pain and tenderness on pressure, and I consider him well so far as his spina bifida is concerned. Antiseptics were not used.

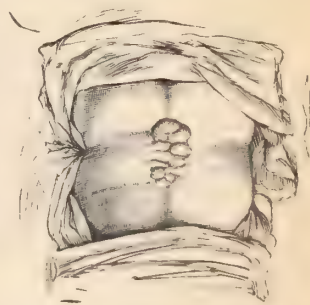


FIG. 2.

In his work on surgery, Mr. Erichsen states that he has never known other than a fatal issue to follow the removal of a spina bifida with ligature, scissors, or knife, while Gross, Hamilton, Wyeth, Drewitt, Holmes, Treves, Hewitt,

* "Am. Jour. Obstet.," December, 1885.

† "Medical Record," December 17, 1887.

‡ "Brit. Med. Jour.," March 24, 1888.

and a host of other brilliant stars, both ancient and modern, are equally positive on this subject. I therefore claim for myself the credit of being the first to record a case of extirpation of spina bifida with the knife in which the patient survived the immediate and remote effects of the operation. In this connection I wish to state that if I should ever be called upon to remove another spina bifida, I would, after excluding the cord from the sac, clamp the tumor at its base by means of a suitable clamp, exerting sufficient pressure to cut off all communication with the cord. Then with one stroke of the knife I would remove the tumor just above the clamp, leaving a sufficient quantity of tissue above the blades of the clamp to admit the sutures, which should be inserted very close together and through the entire thickness of the tissue embraced between the blades. When adjusted, the sutures would effectually seal the wound against the escape of spinal fluid and exclude the air from contact with the spinal membranes, thus obviating, to a great degree, the danger of exciting inflammation in these delicate structures. The operation performed in this manner is practically the subcutaneous removal of the tumor, and, in the opinion of the writer, would, in well-selected cases, afford a greater chance for the recovery of the patient than is given by any method of removal hitherto described.

ON THE ADVISABILITY OF EARLY OPERATION IN CASES OF PTERYGIUM, COMBINED WITH LOSS OF ACUTENESS OF VISION.

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I BELIEVE it is not generally known, at any rate I have been unable to find any record of the fact, that pterygium produces in some cases marked diminution of visual acuteness before it encroaches upon that part of the cornea which lies directly in front of the pupil. In those text-books in which reference is made to the condition of vision in cases of pterygium (and these are in the minority) it is stated that vision is unaffected so long as the growth does not lie directly in front of the pupil, and that, when the growth has extended to this situation, the diminution of vision is in proportion to the amount of obstruction of the pupil.

The following case is one in which I had occasion to work out carefully the refraction before and after operation, and I think it shows that there are at least some exceptions to the foregoing rule:

Mr. E. C., aged forty-seven, a minister, consulted me on February 13, 1888, chiefly on account of recent difficulty in reading sermons while in the pulpit. The left had always been the better eye. He had been suffering from pterygium of this eye for about ten years, and an operation (probably Stellwag's) had been performed five years ago, which did not, however, result in much improvement. He did not attribute the failure of his vision to the pterygium.

When first seen by me the corneal portion of the growth covered the ciliary two thirds of the width of the iris, the pupillary one third, or at the least one fourth, of the width of the iris being visible at its outer side.

Vision and Refraction.—R., $\frac{2}{3}$; my. 5 D. $\frac{2}{3}$; slightly improved by -0.5 D. cyl. 180° . L., $\frac{2}{3}$; my., 0.75 D. $\frac{2}{3}$ partly; slightly improved by -0.5 cyl. 180° .

With R. -4 Ds, L. plane glass, he was able to read well at the required distance, and these glasses were prescribed for him.

February 20th.—Under cocaine anæsthesia, a broad needle was passed beneath the growth just outside the corneal margin. Into this puncture a secondary cataract knife was passed, with the blunt back of which the separation of the growth from the cornea was gradually completed. A snip with scissors was then made in the conjunctiva along the upper and lower margins of the growth, which was doubled upon itself, the apex being tucked into the chink between the eyeball and the base of the growth, and fastened there by a suture coming out near the caruncle. The edges of the conjunctiva above and below the gap thus left were united by one suture.

On March 5th.—L. V. unaided, $\frac{2}{3}$, -1.5 D cyl. 10° , $\frac{2}{3}$ fairly.

The improvement in vision was noticed and remarked upon by the patient before the foregoing test was made.

The obvious explanation of the change in refraction and visual acuteness is that the drag upon the corneal tissues by the pterygium produced irregular astigmatism, and that when the pterygium was removed the regular corneal curve was resumed.

The above-cited case would seem to indicate the advisability of operating in all cases of pterygium in which, while the growth has not yet encroached upon the pupillary area, the degree of acuteness of vision is, nevertheless, below the normal.

Acute Gastric Catarrh.—"Catarrh of the stomach," says the "Lancet," "is perhaps more frequent in infancy than catarrh of any other mucous membrane; it attacks the feeble, the anæmic, the convalescent, and the sufferer from any form of fever, whilst the healthy babe is not exempt. The gastric juice is altered in quality and diminished in quantity; the digestion is consequently impaired, whilst the muscular coat may be paralyzed or too irritable. The treatment should consist more in the avoidance of certain articles than in the administration of drugs. Small quantities of iced water, seltzer, or other effervescing water relieve the thirst; and Jacobi recommends greatly diluted muriatic acid in the proportion of one part to three or ten thousand. Milk should not be given if there be much mucus ejected from the stomach; indeed, it is well to withhold milk entirely for a day or two, and give only whey or some mucilaginous or farinaceous liquid."

Transplantation of the Cornea.—"This operation," says the "Lancet," "has been frequently performed, but hitherto without permanent success. Various cases have been recorded by Mr. Power, Sellerbeck, and others, in which the new cornea taken from cat or dog, the eye of which is preferable to that of the rabbit, has formed adhesions and retained its transparency for some days or weeks, but sooner or later the new cornea becomes hazy, contracts to a button, and is finally absorbed or sloughs out, and the patient remains unimproved."

Deafness treated by Pilocarpine.—"Pilocarpine would appear, according to Corrado Corradi," says the "Lancet," "to be very serviceable in the treatment of deafness due to labyrinthine derangements, whether associated or not with disease of the middle ear. Large doses may be required. In one case two centigrammes of pilocarpine were injected twenty-four times. Moos has injected from five to eight drops of a 2-per-cent. solution in cases of deafness resulting from diphtheria. Considerable improvement of hearing resulted even in cases in which deafness had existed for three weeks. Care is required lest the pilocarpine should increase the debility of post-diphtheritic cases."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 25, 1888.

OOPHORECTOMY AND THE SEXUAL APPETITE.

THE statement made by Mr. Lawson Tait at a recent meeting of the British Gynæcological Society that the ovaries have no more to do with the sexual appetite than have the front teeth has excited some comment, and has roused the ire and evoked the spirit of sarcasm of some antigynæcologists. If the allegation that the operation of oophorectomy is followed by the loss of the sexual appetite be sustained by facts, the question arises as to whether that fact should constitute a contra-indication to the operation when performed for the removal of diseased ovaries. Moreover, some idea as to the extent and power of the sexual longings of women whose ovaries are the seat of a disease of such a character as to render their removal necessary must be formed before the question as to the anaphrodisiac effect of the operation can be decided upon; or before liability to such an effect can be urged as an argument against the employment of the operation as a means of treatment. If the disease is capable of modifying or destroying the sexual appetite, the condition of the patient in that respect can not be made worse by the operation, and it seems hardly possible that a woman who suffers constant pelvic pain, and whose pelvic organs are in a state of such exquisite sensitiveness as to be intolerant of even the most gentle manipulation, can regard the sexual act as a desirable *finale* to the manifold pains and aches of a day of misery.

Few women who are afflicted with disease of the pelvic organs are to any degree ardent in sexual matters. Indeed, by far the greater number of them complain of dyspareunia, of absence of all desire for or pleasure in the sexual act, or of actual repugnance to it. The same lack of desire and gratification in the act is often observed in women who are apparently free from pelvic disease and who seek medical counsel from a desire to bear children, believing this frigidity to be the cause of their sterility.

If the ovaries be diseased to such an extent that their functional activity is lost, or if the Fallopian tubes are so obstructed or otherwise changed that their usefulness is gone, the physiological action of these organs is arrested; and if the sexual appetite be dependent upon the presence of these organs, and proceeds from them as its source, it can hardly be normal when these are functionally inactive, and exert only an irritating influence on the organism. The removal of the ovaries in such a case could not but be of benefit, and would theoretically be more apt to cause the return of sexual desire which had been destroyed as a result of the pain produced by copulation during the course of the disease. Dyspareunia can but result in great

impairment of the sexual appetite, no matter how strong this may originally have been, and this fact certainly lends much force to Mr. Tait's dictum that the removal of the ovaries has no power in itself to destroy sexual desire.

Women, unlike men, are usually dependent on their affections rather than their ovaries in the matter of sexual passion, but even the strong influence exerted by love and a desire to promote the happiness of its object can not change a physically painful ordeal into a pleasure, or induce a feeling of strong desire for such self-sacrifice. We find it difficult to believe, then, that the removal of organs which have been so changed by disease as to cause the destruction of the desire which they are supposed to produce in the individual to whom they belong, can exercise anything but a beneficial effect in so far as sexual matters are concerned. Other considerations in regard to the operation we are not now discussing, but if resulting loss of sexual desire is to be considered one of the chief objections to its employment, we fail to appreciate the force of the argument, or to understand the prominence which has been given to this alleged resulting evil.

THE WINE OF THE COUNTRY.

THE following paragraph was lately published in the London "Truth": "The Duke of Manchester obtained fair prices for the wines which he sold last week. Schloss Johannisberg Cabinet of the great year 1862 realized 240s. per dozen, and the purchaser could get treble the money to-morrow in Germany for it if the wine is in good condition and is really from Prince Metternich's vineyard. Of champagne, the Perrier-Jouet of 1874 went at 280s. and 310s. per dozen, while Lafitte of 1869 and 1864 was assuredly cheap at 105s. and 120s. per dozen, respectively, if it were genuine and in fine order."

Considering the character of the newspaper in which this statement appears, together with the fact that it is wine from an English nobleman's cellar with regard to which doubt is expressed, not only as to its good condition, but also, at least as concerns some of it, as to its genuineness—it may well be asked how often our citizens who import so-called Johannisberger, Chateau Lafitte, Chambertin, Chateau Yquem, or Clos de Vougeot, either directly or through persons on whose judgment and honesty they rely, on grounds that it would perhaps tax them to present very convincingly, really obtain the genuine wines known by those names. Very rarely, if ever. And the reason is not that a sufficient price is not paid, but that those wines are produced only in small quantity and are seldom allowed to get beyond the grasp of local potentates. The Americans who think that they get them are not men who are easily deceived in ordinary matters; they are shrewd men of business. To be sure, they are not wine-tasters by profession, and they are therefore obliged to rely on the judgment of others; but in many other affairs also they are in quite as great measure dependent on something else than their own personal knowledge, and, yet, in those things they seldom go astray. In most matters of trade, all but the hopelessly verdant soon cease to

strive for that which is manifestly unattainable; why the purchase of spurious fine wines should persist as a glaring exception is almost inconceivable. The pertinacity with which such men as we have spoken of allow themselves to be deceived (and in turn attempt to deceive their friends) in this matter is hardly exceeded by the gullibility with which the prodigal "transient" selects his wines from a hotel list, although everybody knows that nine tenths of the hotels at which it would be only by chance that one could get a good ale or cider have on their printed lists the names of all the noted wines that we have mentioned.

We should be showing only a moderate degree of sense if we were to cease trying to get these wines and pretending that we had succeeded. In like manner, our wine-growers would be contributing materially to the advancement of their industry, already very creditably developed, if they were to restrict their efforts, for the present at least, to the production of good ordinary wines, and not waste their resources in fruitless attempts to imitate the famous products of a few European vineyards. We are glad to see that this advice is given them most pointedly by Mr. Arpad Haraszthy, the president of the California State Board of Viticultural Commissioners, in his last report to the Governor of that State. Mr. Haraszthy's own success in producing a champagne which, while it is quite unlike the well-known imported brands, is fully their equal is a fitting example to enforce his precept. We are not unmindful of the fact that many of the attempts made in California to imitate fine European wines have been reasonably successful, especially in the case of Tokay. Moreover, we have not the slightest doubt that as fine wines as were ever grown will eventually be grown in California; but they will not be identical with the wines of other countries, and should not have the same names given them. The production of a wine of extraordinary excellence and at the same time of distinctive characteristics is not the result usually of a series of trials made during the life-time of an individual, undertaken with a view to accomplish the object finally attained, and progressing continuously to that end; it is the outcome of circumstances largely fortuitous—in plain words, in great measure a matter of chance. The fine California wine of the future will come into existence in the same way; it must be the wine of the country and not a counterfeit of the wine of some other country, and it will not be made by copying the details of processes that have been found to answer best elsewhere.

Meantime, it is a matter for genuine congratulation that the wine-growers of California have already produced a series of wines that compare favorably with imported wines in palatability, and, beyond all else, that are not contaminated with deleterious adulterants. This latter feature was to be inferred from ordinary tests, but it is pleasant to have it substantiated by methodical chemical examination, such as Dr. Wolff, of Philadelphia, lately applied to various specimens furnished by the California Vintage Company, of New York, a brief account of which we recently published. We trust that these pure and wholesome wines, so advantageous in the dietary of many an

invalid and as a substitute for the vile concoctions consumed by the average American citizen, may eventually, as Mr. Haraszthy prophesies, be furnished to our laboring classes at the present price of beer. Then California not only will have given health and wealth to thousands who have sought her shores, but will prove a powerful disseminator of an agreeable antidote, so to speak, to the habit of dram-drinking. Then it will be feasible to export our wines to Europe in large quantities, as Mr. Haraszthy is obliged to confess is not the case at present.

MINOR PARAGRAPHS.

A ROYAL ROAD TO MEDICAL LEARNING.

SOME enterprising and ingenious individuals, apparently impressed with the lamentable fact that the medical profession of America is so poorly supplied with followers, and in view of the need of the community for able and well-educated physicians, have devised a plan by which, as is stated in their circular, "it is extremely easy" to "take the degree of M. D." "Forty-five minutes a day for study suffice," and after a series of examinations, which are had by sending the examination papers to the student, who is to "answer them with few or no abbreviations or reference to books," the candidate for examination honors receives a "diploma-certificate for framing," and is then "qualified for a physician's assistant." The duties of this functionary are not defined, we presume for the reason that the teachers recognize the fact that the graduates of their "college" will achieve greatness as physicians' assistants in divers ways, each according to his individual capabilities, for some may shine in the pantry, while others inscribe their names on the scroll of fame in the stable or the kitchen-garden. Each will find his proper sphere of usefulness, and in his own way will do honor to his Alma Mater. But is not forty-five minutes a day devoted to study an inordinate waste of time, under the circumstances? The assistant will find that familiarity with chemistry is by no means essential to him in his operations on the silver-ware or the boots of his chief, and any man of ordinary intelligence is able to grease a carriage-wheel without a knowledge of the source or physiological action of castor-oil. But it is best to err on the side of overpreparation for the practice of a learned profession than on the other, and so we heartily commend this college to all who are ambitious to become physicians' assistants.

UNTOWARD EFFECTS OF CASCARA SAGRADA.

DR. C. M. FENN relates in the "Therapeutic Gazette" for August his experience with the use of this drug, which he believes to be "not a harmless laxative, adapted for general and protracted use, but an irritant cathartic, requiring in its use great circumspection and care." As this is at variance with the estimate of the drug in the opinions of most observers, we will quote several of Dr. Fenn's unfortunate experiences in his use of the remedy. He noticed obstinate vomiting, violent cramps, bloody stools, and, in one instance, in which death occurred from cerebral anæmia and valvular disease of the heart, the patient had been taking a strong decoction of the bark, to the effect of which Dr. Fenn ascribes the existence of large patches of ecchymosis found in the mucous membrane of the stomach. This patient was seventy years of age, and very feeble; and the irritant action of the drug upon the gastric mucous membrane was believed to be the exciting cause of the fatal attack of cerebral anæmia. It may be worthy of note that in the greater

number of cases the drug was used in combination, and in cathartic rather than small repeated doses. The latter plan of administration has proved most successful in the experience of most observers, and is rarely accompanied by any disagreeable effects other than a moderate degree of cramping pain.

"DISTRACTION" IN HIP DISEASE.

DR. E. H. BRADFORD, in the "Boston Medical and Surgical Journal," reports two cases of incision into the hip joint, performed for the relief of persistent "night cries." He found that moderate extension of the limb produced marked separation between the head of the femur and the acetabulum. In the adult, distraction of the femur is prevented by the cotyloid ligament when the force of extension is exerted in a direction parallel to the axis of the body, but it can be produced by traction after the limb has been slightly flexed and abducted. In the case of children, as the cotyloid ligament is weak and the acetabulum smaller, as the rim of that cavity is cartilaginous, therefore direct extension will accomplish the result desired, although it fails in the case of the adult.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 21, 1888:

DISEASES.	Week ending Aug. 14.		Week ending Aug. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	16	4	26	9
Scarlet fever.....	69	12	91	10
Cerebro-spinal meningitis....	3	4	2	1
Measles.....	144	10	121	12
Diphtheria.....	102	27	82	31
Small-pox.....	2	0	2	0

The Mississippi Valley Medical Association will meet at St. Louis, Sept. 11, 12, and 13, 1888. Dudley S. Reynolds, A. M., M. D., Louisville, president; John L. Gray, M. D., Chicago, Ill., secretary.

The following circular has been issued:

Office of the Chairman of the Committee of Arrangements, Lindell and Grand Avenues, St. Louis, Mo., July 19, 1888.

To the Medical Profession of the Mississippi Valley: That there should be a thorough appreciation, on the part of the profession, of the mutual interests of medical men in the States of the West and South can not be questioned. Engaged as they are in the management of diseases peculiar to their section, realizing the value of an exchange of ideas between workmen in the same calling and the same field, the doctors of this great valley should at once step to the front and join earnestly in an effort to organize and crystallize the scattered segments of the profession into a strong and harmonious whole.

Knowing as we do that the seat of empire of our country, socially, commercially, and politically, has removed from the Eastern shore, is not the time ripe for accomplishing the same change in the medical profession? Shall not "Westward the star of empire" of our profession take its way?

Recognizing the truths of the foregoing propositions and in earnest thereof, we, the undersigned, cordially invite all members of the profession in the States west of the Alleghanies to meet in St. Louis, Tuesday, Wednesday, and Thursday, September 11th, 12th, and 13th, and become members of the Mississippi Valley Medical Association.

A good programme is being arranged with a full supply of able papers and interesting discussions.

This is the most desirable time to visit St. Louis, it being during the great exposition and carnival season. All the doctors should bring their wives and families, as there will be ample enjoyments for the latter while the meetings of the society are in progress.

Liberal arrangements will be secured from the various railroad and telegraph companies.

We trust that every member of the profession, eligible, will consider himself and family most cordially invited to St. Louis at the above-mentioned time. Please address the Chairman of the Committee of Arrangements for further information. Procure from your local ticket agents a receipt for full fare paid.

Committee of Arrangements, H. Tuholske, Y. H. Bond, Frank R. Fry, R. M. King, A. H. Meisenbach, H. H. Mudd, Josephus R. Lemen, H. C. Dalton, Spencer Graves, A. H. Ohmann-Dumesnil, Robert L. Thomson. I. N. Love, Chairman.

The following are some of the articles of the constitution of the association:

ART. II. The objects of this association are to foster, advance, and disseminate medical knowledge; to uphold the honor and maintain the dignity of the medical profession.

ART. III. Membership in this association shall be limited to those members of the profession of medicine who acknowledge allegiance to the American Medical Association by signing its code of ethics. No individual who shall be under sentence of expulsion, suspension, or disability from any recognized State, county, district, or local medical society shall be eligible to membership in this association until said disability shall be removed. All applications for membership shall be referred to the committee on credentials. The annual dues shall be \$3 in advance.

ART. IV. The regular meeting of this association shall be held annually. The place, with the time of meeting for each successive year, shall be determined by vote of the association.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 12 to August 18, 1888:*

SUTHERLAND, CHARLES, Colonel and Medical Director. Directed to inspect the medical department at Forts Brady, Mackinac, and Wayne, Michigan; Forts Porter, Niagara, and Ontario, New York; Madison Barracks and Plattsburg Barracks, New York; Fort Preble, Maine; Fort Warren, Massachusetts; Fort Adams, Rhode Island; Fort Trumbull, Connecticut. Par. 7, S. O. 168, Division of the Atlantic, August 16, 1888.

JANEWAY, JOHN H., Major and Surgeon. Granted leave of absence for one month on surgeon's certificate of disability. Par. 2, S. O. 41, Division of the Pacific, August 8, 1888.

BROWN, HARVEY E., Major and Surgeon. Upon being relieved by Captain William C. Gorgas, Assistant Surgeon, U. S. Army, to proceed to his proper station, Jackson Barracks, New Orleans, La., reporting in person to the commanding officer of that post for duty. Par. 8, S. O. 187, A. G. O., August 14, 1888.

COWDREY, STEVENS G., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 77, Department of Texas, July 25, 1888.

TORNEY, GEORGE H., Captain and Assistant Surgeon. To proceed to St. Augustine, Fla., via Palatka, accompany the U. S. troops thereat to Huntsville, Ala., as medical officer, and thereafter return to his proper station (Fort Monroe, Virginia). Par. 4, S. O. 165, Division of the Atlantic, August 13, 1888.

APPEL, DANIEL M., Captain and Assistant Surgeon. Ordered

to Fort Bliss, Texas, for temporary duty. S. O. 77, Department of Texas, July 25, 1888.

GORGAS, WILLIAM C., Captain and Assistant Surgeon. Leave of absence granted in S. O. 177, A. G. O., August 1, 1888, revoked, and ordered to proceed to Camp Monte Sano, Huntsville, Ala., and report in person to the commanding officer thereof for duty, relieving Major Harvey E. Brown, Surgeon. Par. 8, S. O. 187, A. G. O., August 14, 1888.

WOOD, LEONARD, Assistant Surgeon. To proceed from Fort McDowell to San Carlos, Arizona Territory, and carry out the instructions of the department commander. Upon completion of that duty to return to proper station. S. O. 89, Department of Arizona, August 1, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 18, 1888:*

FEREBER, N. M., Surgeon. Detached from the Franklin and ordered to the Naval Hospital, Norfolk, Va.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending August 13, 1888:*

PURVIANCE, GEORGE, Surgeon. Granted leave of absence for thirty days. August 13, 1888.

SAWTELLE, H. W., Surgeon. Detailed as member of board to select site for quarantine station at San Diego, Cal. August 6, 1888.

GOLDSBOROUGH, C. B., Surgeon. Granted leave of absence for thirty days. August 10, 1888.

GUITÉRAS, JOHN, Passed Assistant Surgeon. To proceed to Sanford and Jacksonville, Fla., and Way Cross and Du Pont, Ga., on special duty. August 1, 6, 9, 10, 1888.

BANKS, C. E., Passed Assistant Surgeon. Granted leave of absence for four days. August 6, 9, 1888.

PECKHAM, C. T., Passed Assistant Surgeon. Granted leave of absence for thirty days. August 10, 1888.

URQUHART, F. M., Passed Assistant Surgeon. To proceed to Way Cross, Ga., on special duty. August 9, 1888.

GLENNAN, A. H., Passed Assistant Surgeon. Detailed as member of board to select site for quarantine station at Port Townsend, Washington. August 6, 1888.

WASDIN, EUGENE, Passed Assistant Surgeon. Detailed as member of board to select site for quarantine station at Key West, Fla. August 6, 1888.

WILLIAMS, L. L., Passed Assistant Surgeon. Granted leave of absence for fifteen days on account of sickness. August 10, 1888.

STONER, J. B., Assistant Surgeon. To proceed to Norfolk, Va., for temporary duty. August 9, 1888.

Society Meetings for the Coming Week:

WEDNESDAY, August 29th: Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

THURSDAY, August 30th: Cumberland, Me., County Medical Society (Portland).

OBITUARY NOTES.

Walter L. Ranney, M. D., who died on Friday, the 17th inst., was graduated from the Medical Department of the University of the City of New York in the class of 1880. He was a member of the Medical Society of the County of New York, of the New York Academy of Medicine, and of the Society of the Alumni of Bellevue Hospital. His death was due to Bright's disease.

Letters to the Editor.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

WASHINGTON, D. C., August 21, 1888.

To the Editor of the New York Medical Journal:

SIR: Some complaints having reached the committee in regard to the distribution of invitations to the dinner to be given to the foreign guests of the Congress of American Physicians and Surgeons to be held in this city next month, I must beg the use of your columns to say that this distribution was in my hands.

The council of the Congress having expressed themselves as averse to any elaborate entertainment on the part of the Congress, it may be said, in the first place, that this dinner is *unofficial*, and is in the hands of the *members* of the committee, and not of the committee.

As it was necessary, after the matter was decided upon, to act quickly in order that proper invitations might be sent to Europe and answered in time, it was not possible to arrange this distribution so methodically as might have been done had the time been longer.

It was intended that every member of the Congress—that is, every member of any of the constituent associations—should have an opportunity to subscribe. Some circulars were sent directly by me and some of them by such representatives of the associations as I could most readily get at. It is possible that there may have been some accidental omissions, and it is more than possible that at this season, when so many gentlemen are absent from home, some invitations may have gone astray.

Another possibility, which we know to have been in some cases an absolute fact, is that they have been placed in the waste-paper basket.

This note is intended as an invitation to every member of all the associations composing the Congress of American Physicians and Surgeons, who wishes to do so, to send his subscription of twenty dollars to Dr. S. C. Busey, 1545 I St., N. W., Washington, D. C., for a dinner to be given at Willard's Hotel in this city on Monday, September 17th, at 7.30 P. M.

I am, very respectfully,

ROBERT T. EDEN.

Book Notices.

Practical Electro-therapeutics. By WILLIAM F. HUTCHINSON, M. D. Philadelphia: Records, McMullin, & Co., 1888. Pp. 9 to 247.

Nothing could better indicate the most essential characteristic of this excellent volume than the inscription on its title-page, "That he who runs may read." The book consists exclusively of practical advice and directions applicable to diseased conditions, divided into chapters on a strictly clinical plan. It admirably accomplishes the author's design as set forth in the following words taken from his preface: "So many letters have been received at different times from different places inquiring for concise directions how to use electricity for this or that disease that it seems as if a work containing nothing but such suggestions, all of them the direct outcome of personal experience, would be useful to the general profession; and with such hope alone—to such an end only—the book is written. As strictly practical in intent, all theories have been avoided; for both

theory and technical terms are uncared for by the busy worker, who is only looking for aid from electricity—not a panacea.”

The whole book is stamped with the foregoing purpose. Those conditions in which a given form of electricity has been found to be injurious, or only palliative, or of partial aid, or of aid only after long perseverance, are spoken of as freely as the complete and immediate successes obtainable in other cases. Though the author is keenly alive to the potency for good that there is in this “mysterious force” when properly applied in suitable cases, there is none of a specialist’s advocacy or even enthusiasm in his tone. His style is both terse and attractive. He writes from a full experience, with emphasis, and with abundant illustrations from his own practice; in a manner, on the whole, not unlike that of Dr. Hammond, to whom the book is dedicated. The whole volume could be read through in an evening, a thing which any physician who opens its covers at any chapter would, we think, be tempted to do. He would see that for every practitioner there were a number of most valuable employments of electricity which a careful reading of this book would place as much at his command as they are at that of the electrical specialist. Besides the employments in the more strictly nervous diseases, a number of other conditions are noticed in which notably good results are obtained with almost a certainty by the use of certain forms of electricity. Such are dyspepsia, rheumatism, biliary colic, dysmenorrhœa, prostatic enlargement, torpidity of the liver, general nervous agitation, febrile temperatures, sleeplessness, and several skin diseases. Great care is taken at all points to call attention to the errors as regards kind and strength of current and in the technique of application, which are common with careless men or with those just become owners of batteries.

Incidentally the fruits of much excellent thinking and observation relating to the causes of disease are incorporated. The printing is clear and the text free of errors.

Proceedings of the New York Pathological Society. For the Year 1887. Pp. 212.

THE first seventy-five pages of this attractive little volume are devoted to Dr. Starr’s Middleton Goldsmith lectures, with which our readers are already familiar. Following these are the regular society proceedings, in which we note a decided improvement over those of former years. Not only were the specimens presented rarer and more interesting, but the accompanying histories are clearer and more to the point. There is still a rather dreary succession of descriptions of Fallopian tubes and ovaries, which might imply that the society had a strong gynæcological tendency. There is room for improvement in this particular. On page 161 there is an eloquent tribute to the memory of Dr. Alonzo Clark, an old and honored member of the society. A paper by Dr. Satterthwaite, on “The Diagnosis of Laryngeal Carcinoma by Means of the Microscope,” is of special interest. The make-up of the volume is neat, and there is a good index. We congratulate the society on such material evidences of its prosperity, and prophesy its increasing usefulness.

Anæsthetics: their Uses and Administration. By DUDLEY WILMOT BUXTON, M. D., B. S., Member of the Royal College of Physicians, London. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xii-164. [Price, \$1.25.]

THIS volume contains the sum of our present knowledge relating to an exceedingly important matter. It includes a history of anæsthetics in the past, continued up to the most recent additions, modifications, and combined methods. Local anæsthesia is accorded one chapter, and the medico-legal points in-

volved receive another. But the main purpose of raising the standard of skill and imparting a scientific understanding of all the details of management contributing to the best results is adhered to throughout. The author’s wide experience, as well as his care in collecting and arranging the facts involved, entitles the work to become a standard for both students and general practitioners or surgeons as well. Minute directions are given, and all known safeguards against accident are discussed.

The distinctness of the headings and spacing and the large, clear type make the volume very convenient for instant reference.

The National Formulary of Unofficial Preparations. First Issue. By authority of the American Pharmaceutical Association. Published by the American Pharmaceutical Association, 1888. Pp. ix-176.

PHYSICIANS will find this book a repository of a great number of formularies in increasing demand, and can be assured as to the correctness of the proportions and the manipulations called for in each preparation as given here.

The Best Surgical Dressing; how to prepare it and how to use it, with a Consideration of Beach’s Principle of Bullet-wound Treatment. By OTIS K. NEWELL, M. D., Assistant Demonstrator of Anatomy at the Harvard Medical School, etc. Boston: Cupples and Hurd, 1888. Pp. 9 to 179. [Price, \$1.]

THIS little work treats of the manifold advantages of the use of iodoform as a dressing for wounds, whether these be clean and aseptic, suppurating, or of a character due to specific constitutional disease. The author maintains that the development of septic germs is effectually prevented by the action of iodoform, although its power to destroy them is but slight. The drug acts as a “wound police,” exerting its influence only when a tendency toward septic action is developed, but in no wise interfering with the progress of the normal healing process. Therefore iodoform is the ideal antiseptic, as it acts only when the necessity for action is present, and is of value on account of the very quality which has been instanced as an argument against its utility as an antiseptic—its insolubility in the secretions of the wound—as this insures its constant and unvarying antiseptic action.

The author deprecates the use of excessive quantities of the drug, on account of its poisonous nature. He believes that its antiseptic action is due to the generation of iodine in the nascent form. The book contains a translation of Dr. Mikulicz’s treatise on the use of iodoform in surgery, as well as an account of the method of treatment of gunshot wounds advocated by Dr. H. A. H. Beach, of Boston, with the histories of a number of cases in the management of which that method of treatment was employed. The book is worthy of the careful perusal of the surgeon.

BOOKS AND PAMPHLETS RECEIVED.

Section of Contractured Tissues Essential before Mechanical Treatment can be Effectual. By Lewis A. Sayre, M. D., of New York. [Reprinted from the “Transactions of the Ninth International Medical Congress.”]

Announcement of Gross Medical College of Denver. Medical Department of the Rocky Mountain University. Session of 1888-’89. Denver, Colorado.

Abdominal Surgery. By Hal C. Wyman, M. S., M. D., Professor of Surgery and Operative Surgery, Michigan College of Medicine and Surgery, etc. Detroit: George S. Davis, 1888. Pp. 87. [“The Physicians’ Leisure Library.”]

A Contribution to the Normal and Pathological Anatomy of the Vocal Bands: I. Cystic Growth. II. Glandular Apparatus. By Dr. C. M. Desvernine (Havana), etc. [Published in Spanish in the "Crónica Médico-quirúrgica," of Havana, and rewritten in English by the Author.]

The Limitations of Electrolysis as a Therapeutic Agent in Organic and Spasmodic Stricture of the Urethra, with Cases. By F. Tilden Brown, A. M., M. D. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Epitome of the Cranial Nerves (after the German of Heiberg). By Dr. Wheelock Riler, Rochester, N. Y.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

Diffuse Hyperostosis of the Greater Wing of the Sphenoid.—Smith ("Arch. of Ophthal.," xvii, 1) reports a case of this nature occurring in a woman, aged forty-four, who visited him on March 10, 1887, complaining of constant lachrymation of the right eye, which was more noticeable during the menstrual periods; and that the lids of the right eye were puffy at times. The epiphora disappeared after division of the upper canaliculus and syringing of the lacrymal passages with a solution of bichloride of mercury (1 to 4,000). It was noticed that the right side of the face was slightly prominent. In October, 1887, she again appeared, saying that vision had begun to fail in the right eye shortly after her first visit, and the lids had become permanently swollen and prominent. An examination showed marked bulging outward and forward of the whole right temporal region, with exophthalmus forward and inward, and constant epiphora. The patient stated that when five years old she had been gored by a cow, the horn penetrating somewhere near the right eye, and producing a strabismus which lasted for six months. There was complete atrophy of the right disc, due probably to strangulation of the optic-nerve trunk at the optic foramen. The end of the cow's horn must have penetrated the right orbit, reaching the orbital surface of the greater wing of the sphenoid, as the sequel showed. An incision was made from the external angular process of the frontal bone downward along the border of the orbit, across the malar bone, curving backward beneath the malar process of the superior maxilla. The periosteum was separated from the outer wall of the orbit as far toward the apex as possible, and a solid mass of bone was felt projecting from the orbital surface of the sphenoid. The external angular process of the frontal bone was separated from the malar bone and the malar process was sawed away. The upper end of the incision was then extended backward from the superciliary ridge, and the flap, with the malar bone, was detached by breaking the zygoma. The contents of the orbit were then removed, leaving the cornea and conjunctiva *in situ*. The bony tumor filled nearly one half the orbital space, and was readily removed in chips and shavings, as it proved to be spongy in structure. It was simply a thickening or hypertrophy of true bony tissue. It was removed for a space of about two inches upward, downward, and inward, and a drainage-tube was introduced and brought out beneath the malar bone. The separated parts were then readjusted, the cut and broken bony surfaces were united with sutures of chromicized catgut, and the external wound was united by sutures. The wound healed by first intention, and not a drop of pus was seen. The stitches were removed on the eighth day, and the patient was sent home soon after, the only symptom remaining being a slight dizziness.

Report on the First Series of One Hundred Successive Extractions of Cataract without Iridectomy.—Knapp (*ibid.*) devotes considerable space to a description of the method of operating. The flap should measure fully two fifths of the corneal edge of the limbus conjunctivæ. A conjunctival flap is somewhat in the way during the operation, but acts favorably on the closure of the wound. The peripheric location of the corneal section does not in itself favor the occurrence of prolapse

of the iris. In expelling the lens, the pressure should be made through the cornea on the lower portion of the lens, directly toward the center of the globe. In this way the flap rises, tilts forward, and the lens passes through the pupil with the least bruising of the iris. It is best to attempt the removal of the pupillary portion of the outer capsule in all cases where the center of the capsule is thickened. The removal of the cortex is best done by following up the escaping cataract with the spoon. The speculum should be removed as soon as the lens is out. During and immediately after the operation the eye is to be irrigated with Panas's solution. After the reduction of the iris a few drops of this solution are to be injected into the anterior chamber by passing the nozzle of a lacrymal syringe along the entire wound canal. Prolapse of the vitreous occurred in five cases, and of the iris in twelve cases, in four of which the prolapse disappeared spontaneously in the course of some months. There was one case of suppuration. Iritis or posterior synechiæ occurred in twenty cases, but only two of these caused obstruction of the pupil. Dissection of the posterior capsule was required in fifty-four cases.

Keratitis Bullosa.—Taugemann (*ibid.*) reports a case of this rare disease in a man aged thirty, who for a week complained of severe pain in both eyes. There were three or four vesicles on each cornea, quite large and filled with a clear fluid. The patient had had previous attacks of a similar nature, in which blisters formed on the "sight" and passed away again. The chief complaint was an intense burning sensation and some redness of the ocular conjunctiva. Tension was normal. The patient was well and strong, but gave a malarial history. On the next day some new bullæ had formed. Large doses of quinine were followed by disappearance of all the symptoms of irritation and of the bullæ.

Pathologico-anatomical Investigations of the Eyes of Diabetic Patients.—Kamocki (*ibid.*) reports some interesting observations made on the eyes of four diabetic patients, the eyes being enucleated after death. He found the posterior pigmentary layer swollen and softened, the pigment cells being arranged in layers, transparent, and distended like balloons. The pigment appeared to be rolled up in a ball and crowded together with the nucleus against the cell-wall. In some places the cells had ruptured and had united with others to form cystic spaces. In another case the picture resembled a piece of fine lace. The rarefaction of the pigment in these cases yields conclusive evidence of the presence of its two layers. The gradual transition of the posterior layer of the iris into the *pars ciliaris retinæ* was very evident, as was also the evolution of the anterior layer into the pigment epithelium of the ciliary body. In the lens Kamoki found commencing proliferation of the intracapsular cells, formation of vesicle cells, and absorption of water by the nucleus of the lens, with consequent loosening of its fibers. These he regards as three successive phases in the formation of cataract. It is remarkable that such excessive oedema should exist in a disease presenting so many conditions favorable to the excretion of water. The cause of this is probably to be found in the softening and swelling of the capsule, thus permitting an abnormal degree of diffusibility.

Overexertion of the Accommodation and its Results.—Schoen (*ibid.*) considers that most of the so-called physiological excavations have no right to the name, but that they are due to dragging of the vaginal processes of the optic nerve and lamina cribrosa from overexertion of the accommodation. The appearance of an excavation in those eyes upon whose accommodation great strain is made points to the accommodative process as its cause, and Schoen thinks that the diagnosis of spasm of accommodation can invariably be made in every case of well-pronounced excavation with red margins around the papilla. This overexertion of the accommodation is especially connected with the ætiology of glaucoma and equatorial cataract. Microscopical examinations of eyes with hypermetropic refraction, with the hypermetropic ciliary muscle and the so-called physiological excavation, have convinced him that it is not at all uncommon to find localized inflammatory proliferation of the capsular epithelium directly behind the equator of the lens corresponding to the insertion of the middle zonular fibers, and a similar proliferation corresponding to the insertion of the anterior zonular fibers, and that very often at this point the lens begins to participate in the process in the form of incipient cortical cataract. At

the two points, therefore, where in the accommodative circle different structures are intercalated—viz., the optic nerve and lens—we find in eyes whose accommodation has been greatly overexerted alterations which can only be explained as having been caused by a dragging on the fibers of the muscle of accommodation.

An Apparatus for the Determination of Refraction and Acuteness of Vision.—Plehn (*ibid.*) has devised an instrument for this purpose, consisting of two convex lenses, united in a short telescope-like instrument. The latter consists of two pieces, one sliding within the other, and in each piece is fixed a plano-convex lens of five centimetres focal distance. The lenses have their convex sides turned toward each other, and at first the distance between them equals the sum of the two focal distances. In this adjustment of the apparatus, called the zero position, rays falling upon one lens parallel to its axis will, after passing through it, intersect at the common focal point, and will emerge from the round lens again parallel. By altering the relative positions of the lenses, rays entering parallel may be made to emerge with any degree of either divergence or convergence. The instrument in its simple form has two serious defects: first, the variability of the visual angle, and, secondly, want of uniformity in the division of the scale. If, however, we place the instrument before the eye in such a way that its nodal point coincides with the focus of the ocular, we obtain not only a scale short and uniformly graded, but also a constant visual angle for all conditions of refraction. This may be done by fitting upon the ocular end of the tube a cap thirty-eight millimetres long, provided with a round central opening. The patient should never be allowed under any circumstances to adjust the apparatus. Before beginning the examination, the instrument should be set at the zero position and so directed toward the test-types that they appear in the middle of the field. The test-types are to be placed at a distance of at least four metres, inverted and well lighted. The patient is then to cover one eye with the hand, and with the other look through the instrument. If he reads all the letters smoothly, he is either emmetropic or hypermetropic; to decide which, the instrument is fixed at D. 1 by means of an adjusting screw. The highest positive adjustment with which he continues to read the same gives the degree of hypermetropia, measured with reference to the nodal point of the eye. The acuteness of vision is shown directly by the number of the line read. If the patient is emmetropic, he does not read as well with the convex as with the zero position. If the patient is myopic, we turn to the weak concave adjustments and try successively stronger negative adjustments until no further improvement of the vision results. The weakest negative adjustment with which it is possible to obtain this most distinct vision gives the degree of the myopia. The near point for emmetropes and myopes is given from the strongest negative adjustment with which it is possible to read without diminution of the visual acuteness. If, instead of the spherical lenses, we employ in the apparatus two plano-convex cylindrical lenses of five centimetres focal distance, it can then replace all the cylindrical test-glasses. The instrument must admit of rotation on its long axis to allow of the determination of the direction of the meridians. We must then determine that adjustment of the apparatus with which the gray sectors disappear, and all look equally sharp and black.

Small Orbital Osteoma successfully removed with the Chisel.—Knapp (*ibid.*) reports a case of this nature occurring in a boy, aged thirteen, who had a swelling in the upper and inner corner of the left orbit, which had been noticed for two months, and had steadily increased in size, but without any pain or discomfort. Under the skin, just behind the orbital margin, was a tumor as large as a cherry-stone, of marble hardness and slightly uneven surface, immovably connected with the roof of the orbit. A curved incision two centimetres in length was made through the skin and subcutaneous tissue down to the bone, and this incision was subsequently enlarged two millimetres on each side. The periosteum was detached from the tumor all around with a small gouge. The osteoma was then grasped with toothed forceps by an assistant, a small straight chisel was applied to the base of the tumor, and a few strokes with the ox-hide mallet detached the tumor as a whole, without opening the frontal sinus. The cavity was then carefully washed out with Pana's solution of the biniodide of mercury, and carefully closed with a continuous silk suture. The result was recovery by primary union, the suture being removed on the tenth day.

Three Cases of Abscess of the Frontal Sinuses and Orbits.—Pette-sohn ("Ctrbl. f. prakt. Augenh.," February, 1888) reports as follows: The first case was that of a young woman, aged eighteen, who, two days before she applied for treatment, was attacked by pain in the right eye and a swelling and redness of the upper lid. Examination showed immobility of the swollen and reddened upper lid, slight exophthalmus forward and downward, with limited motility inward and upward, and the presence of a soft, slightly resisting tumor in the inner and upper angle of the orbit. There was no chemosis of the ocular conjunctiva. Pus was seen in the upper part of the middle nasal meatus. An incision was made upward and inward just beneath the orbital arch, and a large quantity of pus evacuated. The exophthalmus gradually receded, and the patient was discharged cured in six weeks.

The second case was that of a young woman, aged twenty-two, who had suffered from a foetid nasal discharge for four weeks. Twelve days later the entire left side of the face became swollen and reddened, which condition in three days disappeared, leaving a circumscribed swelling in the supero-nasal angle of the orbit, with swelling of the upper lid. An incision was made through the upper lid, and a large quantity of pus was evacuated from the orbit. It was found that the abscess existed originally in the frontal sinus, and had broken through the wall into the orbit. The patient eventually recovered.

The third case was that of a man, aged thirty-one, who had been attacked, on the week before applying for treatment, by a severe pain in the right side of the forehead. On the next day there had appeared a distinct tumor in the supero-nasal angle of the orbit, and swelling of the upper lid. The swelling became so tense that in a few days the patient could not open his lids. He had a discharge from the nostrils for nearly two months. A deep and long incision was made just beneath the eyebrow in the direction of the frontal sinuses, and a large quantity of pus was at once evacuated and carious bone discovered. This patient also recovered.

The Visible Blood-current in newly formed Corneal Vessels.—Friedenwald (*ibid.*) calls attention to the advantage of Hartnack's so-called globular lens in observing the blood-current in vascular keratitis. Looking through this lens, there may be seen small red columns which are separated from each other by colorless spaces. The latter are longest in the smallest vessels, and the red columns also vary constantly in length and position, advancing and receding, and are evidently veins, from the direction in which the blood moves steadily forward.

A Case of Posterior Lenticonus.—A case is reported (*ibid.*) of this kind occurring in a boy aged ten. The right eye showed a moderate degree of concomitant divergent squint, and could count fingers at three metres and a half. In the left eye vision was normal. The boy usually saw single, but with a red glass before one eye he had crossed diplopia. A prism of 30° for the distance and one of 37° degrees for the near point caused fusion of the two images. The left eye was emmetropic, and the media were perfectly clear. In the right eye the ophthalmoscope showed, in the center of the usual red reflex, a smaller circular figure, limited by a changeable dark ring. Its diameter was about double that of the encircling bright ring, and the whole somewhat resembled in appearance a drop of oil. A diagnosis of posterior lenticonus was made.

Replacing the Lid Margin in Trichiasis of the Upper Lid.—Hotz ("Kl. Mntsbl. f. Augenhelk.," March, 1888) recommends the following operation: The skin of the lid is incised on the level of the upper border of the tarsus, and, by excision of a strip of muscular fibers of the orbicularis muscle, the upper edge of the tarsus is laid bare. The remainder of the *pars ciliaris* of the orbicular muscle, together with the skin of the lid, is dissected from the tarsus as far down as the roots of the cilia. Immediately above the roots of the cilia a transverse incision is made through the tarsus toward the posterior angle of the edge of the lid. Above this incision and parallel to it a second incision is made, a varying distance from the first, but obliquely, so as to join it at the posterior angle of the edge of the lid. In this way a wedge-shaped piece of tarsus is removed, and the edge of the lid may then be turned upward around its posterior angle, and fixed in a position perpendicular to the conjunctiva. Three or four sutures are then introduced, the needles first passing through the lower margin of the incision in the lid, then through the upper edge of the tarsus, and finally

through the upper edge of the incision in the skin. After all bleeding has ceased and the wound has been thoroughly cleansed, the sutures are to be tightened and tied.

Erythropsia.—Valude ("Arch. d'ophthal.," March-April, 1888) draws the following conclusions in regard to initial and subsequent attacks of erythropsia: Assuming the presence of a retina prepared for erythropsia by the extraction of the lens, and assuming also, in addition, the presence of a general susceptibility or a general neuropathic state, the optical apparatus for the reception of visual impressions, exposed to an unaccustomed luminous irritation, or to the dazzling produced by a mydriatic, or to excessive fatigue, undergoes an ultra-physiological excitement and exhaustion, in which the sensitiveness for colored rays of the greatest refrangibility is lost, and remains for red alone. The characteristic tendency of erythropsia to reappear on the slightest pretext shows that the real origin of this phenomenon must be sought in the predisposing causes, aphakia and general nervous state.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

The Cystoscope in the Diagnosis of Obscure Vesical Disease.—

This subject is attracting much notice, not only in foreign countries, but in our own, and a description of the apparatus of Nitze and Leiter appeared in the Journal not long ago. An element of uncertainty regarding its range of utility is evident, some writers seeming to think it will be the means by which, in the not far distant future, diseases of the bladder will be universally recognized, while others are of the opinion that its use will become restricted to the small number of cases which can be otherwise diagnosticated only by digital examination or not at all.

Sir Henry Thompson ("Brit. Med. Jour.," April 14, 1888) thinks the instrument will be most useful in cases of small, bleeding tumors, respecting the presence and extent of which it is often difficult to arrive at an accurate conclusion. In these cases there are repeated attacks of hæmaturia, which may develop two or more years before the loss of blood becomes considerable, and may be for a long time without pain or difficulty in micturition. The usual method of diagnosis is to find a shred of the growth under the microscope; but this does not tell whether the growth be large or small, single or multiple. Without this instrument it has been at times necessary to make a perineal incision to obtain these data, and with it, it may be still necessary in a certain number of cases, but in others these facts may be learned by its means. It may sometimes, though rarely, be of use in cases of cancerous growth. In cases of impacted calculus or of foreign body in the bladder it may be very valuable. In the urethra it is best not to employ it too freely, as there are few cases where it will be of advantage; but it may be of use in cases of localized congestions or papillomatous growths requiring the action of some caustic. The use of the instrument taxes the bladder and urethra more severely than does the ordinary operation of sounding for stone, and should not be resorted to unnecessarily, but only when other means of diagnosis have failed.

E. Hurry Fenwick (*ibid.*) calls attention to the great advantage gained by a visual examination in certain cases of reno-vesical disease over digital exploration through the perinæum. The value of this instrument as a means of diagnosis is shown by a number of cases which he reports. It will prove important in the differential diagnosis of symptomless hæmaturia and pyuria, as the ureters can be seen and examined as to the nature of their efflux. He has seen a jet of bloody urine squirt from a ureter into an artificially cleared medium, showing the source of the hæmorrhage. It may be useful in estimating the advisability of suprapubic removal of prostatic intravesical growths (MacGill's operation). It may assume a prognostic position as our visual knowledge of the bladder in the living subject is increased, showing what growths are removable and what should be left alone. It may be a means of deciding between the boutonnière and the suprapubic operation for vesical growths; those which are single, lightly pedicled, and close to the urethra may be well treated by the perineal incision, while those which are multiple, sessile, or springing from dimples in the mucous membrane require the wider access afforded by the *sectio alta*.

Nitze (*ibid.*, April 21st) describes fifteen cases of vesical tumors diagnosticated by means of this instrument. In nine cases the cystoscopic appearances were confirmed, the size, position, and form having been correctly told. In six cases operation was deemed inexpedient, or was refused by the patient. In most of these cases a careful examination of the urine had been made, but in only two cases had villous tissue been found. Rectal palpation and examination with the sound had given negative results in all cases in which either had been tried. The only method which can compare with cystoscopy in giving information regarding the size and nature of a vesical tumor is digital exploration through a boutonnière, or the high section. The superiority of the cystoscopic method lies in the smaller amount of inconvenience it causes the patient, the cutting method not being free from danger and requiring narcosis, while the introduction of the cystoscope is similar to a simple catheterization.

Harrison (*ibid.*, May 26th) thinks the chief value of the cystoscope will be found, not in supplanting other means of diagnosis, but in providing the additional link which in certain cases is necessary to make the chain of evidence complete. Ulcerous and tuberculous surfaces may be seen in the bladder, which otherwise could not be demonstrated, and vesical growths may be detected at an early period. In the diagnosis of stone and stricture there is little left for it to accomplish.

Drainage of the Bladder as a Means of arresting Hæmorrhage from a Vesical Tumor.—Mr. Southam ("Lancet," May 26, 1888) reports a case which illustrates the beneficial effect of drainage of the bladder in arresting hæmorrhage from a vesical tumor when the patient is in so low a condition from the anæmia induced by profuse and long-continued loss of blood as to render it doubtful whether he would recover from the severer operation of removal or not. The patient had had profuse, continuous hæmaturia for six months, had been confined to his bed for a month, was too weak to raise himself, and exhibited the signs of extreme anæmia. Ice applied over the pubes and in the rectum, together with large doses of ergot and iron, had no effect on the bleeding. Perineal urethrotomy was performed in the usual manner. The finger introduced into the bladder found a sessile growth about the size of a Tangerine orange. The bladder was washed out with hot boric-acid solution and a rigid lithotomy-tube was left in the opening. The operation was followed by a complete arrest of the bleeding. The bladder was washed out daily with boric-acid solution, the tube was removed in a week, and the wound was closed on the twenty-third day. Improvement was rapid. There was no sign of a recurrence of the hæmaturia five weeks later. Mr. Southam considers the arrest of the bleeding to be due to the fact that the bladder is put in a state of physiological rest by drainage, as it is not excited to contraction by the presence of urine. This contraction is an important factor in the production of the hæmorrhage, as every contraction, by interfering with the return of blood from a vascular growth like a papilloma, must produce in it a condition of extreme congestion, which is probably only relieved by a giving way of the thin-walled vessels of the villous processes, and consequently by hæmorrhage into the interior of the bladder. The relief thus obtained is of necessity only temporary.

Suture for the Bladder.—The method of suturing the walls of the bladder after suprapubic lithotomy devised by Brenner, and called by him "Schnürrähen" or "lace suture," is thus described by McArdle ("Dub. Med. Jour.," June, 1888):

"After separating the mucous from the muscular coat, a thread was passed around the wound in the bladder through the submucosa, two or three millimetres from the border of the wound. A second thread was now passed through the muscular layer, going around the wound in the same way, being further from the wound at its angle. The sutures were then drawn and tied in the order of introduction, so that all the walls of the bladder were collected into a dense mass at the point of opening." In experiments on dogs it was found that the bladder thus closed withstood much higher fluid pressure than after button or ordinary double suture. This suture was advocated for cases where the bladder wall was thinned and softened. Brenner claimed among other advantages that the bladder became functionally active at once, that the wound surface was small and healed quickly, that the scar was thick and solid, and only two small threads were left in the wound.

Hæmaturia.—A valuable article on the diagnosis of the cause of hæmaturia is given by Berkeley Hill ("Brit. Med. Jour.," May 26, 1888). It is only a symptom and may indicate a trivial injury or a dangerous and rapidly fatal condition. The multitude of causes is rapidly dealt with, being divided into general and local. The kidney is probably the most frequent source of bloody urine, but the signs are frequently negative, and often the diagnosis can be made only with difficulty. The necessity is evident for a surgeon to be posted on all causes which will produce hæmaturia in order to distinguish those needing surgical treatment, and as a brief *résumé* of these the article is excellent.

Dr. Oliver (*ibid.*) relates a very unique case of hæmaturia. A young lady was suddenly seized with high temperature, with no symptoms to account for it, and hæmaturia. Neither was influenced by drugs, but at the end of thirty-five days terminated in recovery. The urine was at times deep black, plentiful, acid, of normal specific gravity, passed without pain, and at no time contained clot, pus-cells, or casts. The explanation offered is based on the fact that the patient's brother was suffering at the time with typhoid fever. She had been exposed to the same influences and was seized at about the same time. Hence it is suggested that in her case the kidneys bore the brunt of the typhoid poison, or that, as the result of the poisoned condition of the blood, the walls of the renal vessels allowed it to escape.

Catheterization of the Ureters.—In order to determine which kidney was affected in a case presenting the symptoms of pyelitis, Axel Iversen ("Contrib. f. Chir.," 1888, No. 16) performed suprapubic cystotomy, and by means of an electric light passed a catheter into each ureter. The urine collected from the left ureter contained much pus, while that from the right was clear, thus demonstrating the pyelitis to be on the left side. Nephrectomy was not performed because an examination of the urine from the right ureter revealed the presence of organic disease of the right kidney.

Insertion of the Ureter into the Intestine.—Tuffier ("Ann. des mal. des org. génit.-urin.," April, 1888), in view of the proposed method of treatment of extroversion of the bladder by securing the ends of the ureters into the lower part of the intestinal tract, made two experiments on dogs to determine its practicability. The most careful antiseptic precautions were observed, but in each case the animal died of general peritonitis from perforation, one on the third and the other on the fifth day. In each case the ureter was found full of pus and the kidney intensely inflamed, showing that a very dangerous nephritis was liable to be occasioned by the operation, which developed with a formidable rapidity.

Jejunal Enterectomy for the Closure of an Artificial Anus.—Sinclair ("Brit. Med. Jour.," June 2, 1888) records a case with a very interesting history. The patient, a farm laborer sixty years of age, stated that eighteen months before coming under observation he had been acutely ill with a swelling in the groin. This swelling burst, something black escaped, and then the contents of the intestine issued freely. Evidently a femoral hernia had sloughed at this time, leaving an artificial anus surrounded by a dense cicatricial mass. A moderate amount of feces passed by the normal channel, but the condition of the parts seemed to contra-indicate all milder measures. Enterectomy was therefore resorted to and successfully performed as recommended by Sir William MacCormac.

Hepatic Surgery.—Tiffany ("Am. Jour. of the Med. Sci.," June, 1888) narrates two cases of hepatic surgery, one an abscess of the liver, the other removal of biliary calculi from the gall bladder through an incision made through the substance of the liver itself. The points he makes are the ease with which hæmorrhage from the liver is controlled by pressure, and the method he employed of shutting off a portion of the surface of the liver from the peritoneal cavity by stitching the parietal peritonæum at the edge of the wound in the parietes to the visceral peritonæum by a close, continuous suture, so that the operation could be performed irrespective of the peritoneal cavity.

Suppurating Hydatid Cyst probably connected with the Liver.—Daly ("Lancet," May 19, 1888) reports the occurrence of an enormous cyst in the abdomen of a man aged twenty-one years, a fish packer, which he aspirated repeatedly, removing large quantities of fluid, as much as thirty-six pints having been removed at one time. The fluid reaccumulated rapidly. At first the fluid was sweet, with a specific gravity

of 1.006, and, on standing, turned from a brown to a greenish color. It contained a large amount of bile and albumin. The bile diminished at each aspiration, and finally disappeared. The fluid thereupon became purulent and laparotomy was resorted to. It was found to be a hydatid cyst, and was probably once connected with the liver, as was shown by the presence of bile in the fluid at first, although the liver was never made out to be enlarged, either before or after the operation. The case shows the non-advisability of repeated aspirations of cysts when they quickly refill.

Results of Excision of the Knee Joint in Two Cases after the Lapse of Twenty Years.—Lee ("Lancet," April 21, 1888) gives these results of two operations performed by him in 1867: The first case, that of a boy twelve years old, who had suppurative in the knee joint and abscess of the head of the tibia, with caries and necrosis of portions of the bone. Excision was performed. In July of the next year a small piece of dead bone was removed from the upper part of the tibia. At present the bony thickening about the knee is greater than is usual after excision. The patient has perfect use of the muscles of the leg and foot and can walk all day. The leg is nine inches shorter than the other. This deficiency is supplied by a patten attached to a laced boot. In walking it may be seen that there is something not quite natural in the action of the foot, but otherwise there is no limp or peculiarity in his gait. The other case was one of strumous abscess in the knee joint of a boy seven years old. The joint was excised in March, 1867. In 1868 the joint was movable to some extent in every direction. The fibrous tissue between the ends of bone and a nodule of bone from the head of the tibia were removed. In 1879 he could walk or work all day. The limb was six inches shorter than the opposite one. Flexion and extension were perfect, while lateral motion was absent, apparently on account of little buttresses of bone thrown out on each side of the head of the tibia. This case shows how firm and manageable a support the play of the muscles of the leg and foot can give, and also shows that when excision of the knee has not left the leg in a condition to afford a firm support for the body, a second operation may be performed with a reasonable prospect of success, and that, if solid union should not ultimately take place, a very useful movable joint may result.

Suture of Internal Semilunar Cartilage to the Head of the Tibia.—Allingham ("Brit. Med. Jour.," May 26, 1888) maintains that in acute cases of dislocation of the semilunar cartilage the usual treatment by rest, pressure, etc., should be employed, but when these have failed, operative measures should be adopted. He describes the following operation performed on a young man a year after accident: A vertical incision two inches long was made over the internal aspect of the joint, the center of the wound being over the internal cartilage. The finger introduced into the joint fixed the cartilage in position, where it was secured by a stitch of stout catgut, passed with a strong needle mounted on a handle through the periosteum at the head of the tibia and through the semilunar cartilage, and tied tightly. The joint was washed out with carbolic lotion, the cut edges of synovial membrane carefully united with buried catgut sutures, and the skin-wound closed with silver wire. No drainage-tube was inserted. Antiseptic dressings were applied and the limb was fixed on a splint for three weeks. The result proved excellent. In future cases he proposes to employ a transverse instead of a vertical incision, as by this means a better view of the joint will be obtained.

Ogston's Operation for Genu Valgum.—This operation is perhaps not so familiar as to render it useless to repeat Professor Ogston's description, quoted by Mr. Davy in the "Lancet" for May 5, 1888:

"The patient was chloroformed, the knee flexed as far as possible, and the thigh turned outward. A long and strong tenotomy knife was introduced through the skin, three inches and a half above the tip of the internal condyle on the inner side of the thigh, and so far back as to be opposite the ridge of bone running between the linea aspera and the condyle. Its blade was carried forward, downward, and outward over the front of the femur, with its cutting edge directed to the bone. When its point could be felt under the skin in the groove between the condyles, where the patella would normally have been lying in the flexed position of the limb, the cutting edge was pressed against the bone, and the soft parts and periosteum divided by one slow, firm movement in withdrawing the knife. The external wound thus made was about on

third of an inch long, and formed the entrance to a subcutaneous tunnel, running obliquely over the front of the femur, and ending in the cavity of the joint. Adams's saw for subcutaneous division of the neck of the femur was introduced into the tunnel, and the condyle sawn off by directing the edge of the saw straight backward. The position of the saw could be exactly controlled by feeling its point working gradually backward in the groove between the condyles. As soon as it was estimated that the condyle was almost entirely separated, and that the saw had arrived near the popliteal space, the saw was withdrawn. The knee was completely extended, and then, with the hands, and the operator's knee as a fulcrum, the patient's knee was forcibly straightened by bending the leg inward. The remaining connections of the condyle with the femur gave way, and instantly the leg became as straight as a healthy limb."

Mr. Davy gives a table of sixty-four of these operations which he has performed, and describes a combination saw and tenotome which he employs. He is of the opinion that in young subjects this is a safe and efficient remedy for genu valgum. It requires dexterity and a minute attention to detail. Absolute rest should be given the joint, and nothing except the evidence of serious mischief should induce the surgeon to interfere with the leg and splint until three weeks after the operation.

Rickety Deformities of the Lower Extremity.—Owen ("Practitioner," April, 1888) directs attention to the value of forcible straightening (*redressement forcé*) of the limb under the influence of an anæsthetic with the hands and knee of the operator as a means of treating such of these deformities as are not likely to be amenable to treatment by the gentler method. When the bone is too solid to yield to this and osteotomy is to be performed, he urges the use of a rather short, narrow, and thin saw (keyhole saw), in preference to the osteotome and mallet, as less dangerous. In knock-knee he makes a longitudinal incision, three fourths of an inch long, on the outer side of the thigh a little above the condyle, opens a passage with a raspator, inserts the saw, and saws the bone from a half to three quarters of the way through. However great an antero-posterior or lateral curvature may be in childhood, he considers removal of a wedge-shaped piece of bone superfluous.

Osteoplastic Resection of the Foot.—Sir William McCormac ("Lancet," May 5, 1888) reports a very satisfactory result in a case of suppurating arthritis of the ankle joint treated by resection according to the method devised by Mikulicz and Wladimiroff. The object of the operation is to preserve the toes and metatarsal bones, which, after removal of the tarsus and malleoli, are brought into a straight line with the leg, and the toes bent at a right angle, thus producing an artificial pes equinus. A broader surface of support is provided than after either Syme's or Pirogoff's amputation, and there is some elasticity of the foot left. Usually the limb will be an inch longer than the other. The patient upon whom Sir William operated a year ago can stand or walk with comfort. The sensation in the foot appears perfect, and the toes are mobile. Sir William is of the opinion that the operation will prove better adapted to cases of injury than of disease, but his experience would tempt him to perform it again in any case in which the bones of the heel and soft parts covering them were extensively damaged or diseased, the anterior half of the foot remaining healthy.

"Bone Setting."—Under this heading Mr. Penny discusses ("Brit. Med. Jour.," May 26, 1888) a mode of treatment of fibrous ankylosis of joints much practiced by the persons known as bone setters in England. The motto of these people seems to be, "Here is a stiff joint, it must be moved." In spite of their ignorance regarding the pathology of joint disease, they cure a large number of cases of lameness, and do damage in only a small number. Fibrous adhesions often occur in joints which have been sprained and treated properly in the earlier stages. These may be as fine as threads, or may form broad bands, in either case restricting the motion of the joint and causing muscular spasm. The joint remains to a greater or less extent useless and painful under various methods of treatment until a bone setter is called, who says "a bone is out," gives the joint a wrench, a crack is heard, and the joint moves freely afterward. This, Mr. Penny is convinced, is the correct treatment for this class of cases. Some inflammation may ensue in a certain number of cases, but it is not of a character likely to be serious. If serious trouble should arise it would have to be met in the usual

manner. He considers a large number of so-called hysterical joint affections to be cases of adhesions, and declares that he meets with less hysteria and more definite pathological lesions every year.

Fracture of the Olecranon.—Lloyd ("Lancet," May 5, 1888) describes a case of fracture of the olecranon in which a wedge-shaped fragment was driven downward and forward into the great sigmoid notch, thrusting the humerus out of the articulation, and by its presence preventing the reduction of the dislocation. The humerus was also fractured just above the condyles. This rare combination of injuries resulted from a fall, the patient striking on his olecranon with the elbow joint acutely flexed. Excision of the joint had to be resorted to.

Resection of the Upper Third of the Humerus.—Hurd and Christian ("Ann. of Surg.," June, 1888) publish the results observed in a case of excision of the head and upper third of the humerus performed by Dr. McLean twenty-five years ago. The patient had the upper third of the humerus shattered by a rifle-ball in a battle in 1862. Ten days later the head and five inches of the shaft of the bone was removed. For some years, at infrequent intervals, the track of the wound suppurated and discharged small pieces of necrosed bone. In 1887, without the use of apparatus, the patient could use the arm to feed himself, button his clothes, and perform other complicated acts. He could raise the arm toward the scapula and move it slightly backward, but could not bring the humerus forward on the chest. The muscles normally attached to the upper portion of the humerus had lost their insertion, and were for the most part atrophied from disuse. Considering the extent of bone excised, the wide latitude of voluntary motion preserved is remarkable.

Wiring Fractures of the Patella.—Axford ("Annals of Surg.," July, 1888), after calling attention to the facts that very good results are frequently obtained after fractures of the patella by non-operative treatment, and that such operations as wiring the fragments are not devoid of danger to life and limb, brings forward a variation of the operation. He first tries to limit inflammation and effusion into the joint as far as possible by elastic pressure and the application of cold for the first forty-eight hours after the accident. Then, if the effusion be so great as to prevent the approximation of the fragments, it must be removed by aspiration. If the fragments will not then come together he frees the bony attachment of the patellar ligament according to Bergmann's plan. If the prepatellar aponeurosis presents an obstacle to union and can not readily be removed by manipulation, "there can be no objection to passing a tenotome into the joint for the purpose of clearing the fractured surfaces." After the fractured surfaces are correctly placed in apposition, two drills are introduced and made to traverse the bone in the long axis of the limb. The perforation thus made serve to carry the wires, which, passed in this manner, do not enter the joint. Attention to detail and antisepsis is necessary to insure success, but it is held that the minimum amount of danger is incurred and a reasonable chance for bony union is secured.

Cerebral Surgery.—Mr. Barker ("Brit. Med. Jour.," April 14, 1888) records at some length the history, symptoms, and treatment of a case in which he trephined and drained away the products of an intracranial inflammation believed to have been a localized meningitis about the island of Reil. From the history it may be inferred that some cerebral or meningeal lesion had existed for a number of years. In January, 1888, acute symptoms appeared in connection with an exacerbation of a chronic suppurative otitis from which the patient had suffered since childhood. The mastoid cells were opened, but no products of inflammation were found. Other forms of intracranial disease were excluded in the following manner: Plastic phlebitis with thrombosis by absence of rigor, the inclination of the temperature to fall rather than to rise, and the absence of swelling in the course of the jugular vein; pyæmia by the same facts, as well as by the absence of secondary deposits and the general aspect of the patient; subdural abscess by the absence of a rigor, the course of the temperature, and by the absence of œdema in the soft tissues; cerebellar abscess seemed improbable from the history, the character of the ear mischief, and absence of caries; abscess in the temporo-sphenoidal lobe seemed insufficient to account for the symptoms exhibited.

An opening was made in the skull over the fissure of Rolando, the lower edge being two inches and a half above the Sylvian fissure. A

hollow needle introduced at the lower border downward and inward found thick, yellow serum. Another opening was then made, one inch and a half above the base line, Reid's measurement, and one inch and a quarter behind the center of the bony meatus of the ear. Through the middle of this opening a hollow needle, pushed inward and forward an inch and a half, evacuated nearly half an ounce of fluid. A drainage-tube was inserted and the patient made a steady recovery. In order to demonstrate the correctness of his inference that this was the product of a localized meningitis about the island of Reil, he performed an exactly similar operation on the cadaver, inserting pegs to the depth of, and in the direction of the punctures. These were found on section to come almost in contact in the space overlying the island of Reil. An ounce of fluid among the convolutions over the island of Reil would press them apart and form a space which the needles could empty without coming into contact with them. If the collection of fluid had been a temporo-sphenoidal abscess it would not have been reached by the first puncture, or, unless very large, by the second. It is an interesting case as bearing on the treatment of meningitis by operation.

Cephal-hydrocele.—Southam ("Brit. Med. Jour.," May 12, 1888) records a case of traumatic cephal-hydrocele, a somewhat rare complication of simple fracture of the skull. The patient, six months of age, had fallen down stairs, and was picked up unconscious. Some hours later he was drowsy, had right ptosis, with slight conjugate deviation of eyeballs toward the right side. A fracture was found running across the right occipito-parietal region, causing an oval depression two inches and a half long by an inch wide. After a few days the symptoms disappeared and the child was discharged from the hospital, apparently quite well, on the eleventh day. Four days later he was brought back. A distinct swelling was found over the site of fracture, elevated three fourths of an inch above the surrounding surface, oval, soft, fluctuating, and pulsating synchronously with the anterior fontanelle. It was partially reducible by pressure, and grew full and tense when the child cried. The skin over it was normal. Pressure, applied by means of a pad and bandage, succeeded in effecting a perfect disappearance of the tumor in a month's time.

Cerebral Injury from a Fall.—Ireland relates the following history of an unusual case ("Edin. Med. Jour.," June, 1888): A lady was thrown from a carriage, striking on the left side of the head. She was picked up unconscious, in a state of collapse, with blood running from the mouth, nostrils, and the left ear. There was a bruise above the left ear, injury to the zygoma, ecchymosis and swelling of both eyelids, external strabismus of the left eye, and complete paralysis of the right arm and leg. The paralysis gradually improved, and the patient regained consciousness nineteen days after the accident. Paresis of the left side of face, childish intelligence, and pain in the left eye were now noted. The nerves affected seemed to be the third, sixth, seventh, and perhaps the ninth. Improvement was slow, but at the end of two years she had made a good recovery. The only trace of paralysis which remained at that time was a slight drooping of the left eyelid, which became worse when the patient was fatigued. Certain events were completely effaced from her memory.

If these symptoms were due to a fracture of the base of the skull it must have been very extensive. Dr. Ireland is inclined to think that in this case there was no fracture of the base of the skull, but that the symptoms were due to bruising of the cerebral tissues and pressure from effused blood.

Buboes.—Culver ("Jour. of Cutan. and Gen.-Urin. Diseases," June, 1888) protests against the routine use of the scalpel in the treatment of buboes as avoidable in certain cases, while the scar which remains after operation may in the future lead the patient into unpleasant family relations.

Non-suppurating buboes occurring with gonorrhœa are to be treated by a few days' rest in bed, with the leg raised and the thigh flexed, with application of cold, a mild cathartic, and an alkaline mixture.

The diagnosis should be made when possible between adenitis and periadenitis, because, in a certain number of cases, the former may be aborted by prompt treatment. In adenitis the gland is at first broader, with distinct outlines, not fluctuating; the surrounding tissues are hard, not doughy, not very œdematous, little reddened, and only slightly

painful on pressure. In periadenitis the gland is not easily outlined, the area of swelling is greater, more doughy, pits on pressure, and sometimes fluctuation can be detected. If a case of adenitis is seen early a brisk cathartic should be administered, followed by a good tonic and chloride of calcium in doses of five to fifteen grains three times a day. Of the therapeutic action of this drug little is known, but it acts with marked effect on glandular swellings of various origins. Locally, green soap should be rubbed on night and morning, or a solution of iodine in collodion, 3 j to 3 j, should be painted over and around the swelling. Burning, blistering, and the injection of antiseptic fluids are not approved. If these remedies do not succeed in determining resolution it is best to hasten suppuration and to open by a vertical incision instead of the ordinary longitudinal one, or to aspirate and wash the cavity out. In the periadenitic variety early and thorough suppuration should be sought and the cavity cleaned out in the same manner. If, in this variety, the gland does not suppurate, it is best to remove it. Chancroidal buboes probably can never be aborted, hence suppuration should be hastened by poultices, while the patient is given tonics, good living, laxatives, and opium. As soon as pus appears the bubo should be aspirated, the cavity irrigated and thoroughly distended with a 1-to-1,000 solution of corrosive sublimate every day, and gentle pressure maintained by means of a spica bandage. If this method is correct, a specific abscess is converted into a non-specific ulcer, the walls of the cavity are ready to heal by adhesive inflammation, and in a few days will heal without further suppuration or tissue necrosis.

Observation of the Pupil in the Administration of Chloroform.—Dr. Neilson ("Jour. of Anat. and Physiol.," January, 1888) states, as the result of a large number of experiments and of clinical observations, that, 1, the effect produced by chloroform on the pupil is at first dilatation, varying in degree and duration, then contraction, as the narcosis becomes profound, and dilatation again when the sensibility is returning. If the administration be still continued with the pupil strongly contracted and motionless, the pupil will dilate suddenly and completely. This dilatation of the pupil will be coincident with a state from which it will be difficult or impossible to resuscitate the patient, and is the dilatation of asphyxia. 2. So long as the pupil dilates in response to excitation by pinching, etc., the patient is not sufficiently narcotized for the operation to be proceeded with, unless the latter is slight and does not require complete anæsthesia. 3. When the pupil becomes strongly contracted and immobile no more chloroform should be given until it begins to dilate again. If then further anæsthesia be required, a little more chloroform should be given till the pupil again contracts. 4. The occurrence of emesis causes dilatation similar to but more sudden than that which happens when sensibility is returning, and the efforts of vomiting have the effect of arousing the patient.

Angio-sarcoma of the Trachea.—A patient operated on by Schröter in 1867 and again in 1873, died in 1887, twenty years after the first operation ("Wiener med. Presse," No. 21, 1888). On autopsy a tumor was found at the fifth tracheal cartilage, which proved under the microscope to be an angio-sarcoma.

Sebaceous Tumors.—Robertson ("Brit. Med. Jour.," June 2, 1888) recommends that the following treatment be followed when patients object to the usual mode of treatment. He claims marked success for the method. "With a cataract knife (Graefe's) puncture the cyst and gently squeeze out the contents; then introduce a very small piece of nitrate of silver. On the following day, by means of a pair of forceps, the capsule of the cyst can be withdrawn, just like the shell of a bean, without any portion being left adherent. In no case has there ever been any return of the growth or any ill effects following the operation."

OBSTETRICS.

By ANDREW F. CURRIER, M. D.

Bacteriological Investigations upon an Extra-uterine Fœtus, together with Theoretical Observations concerning the Bacteriological Condition and Destiny of a Dead Fœtus which remains within the Body.—Bayard Holmes ("Ctbl. f. Gyn.," June 2, 1888). The author took a portion of a fœtus which had been removed from a dilated Fallopian tube, the fœtus having been dead two months at the time of its

removal, and made his experiments. Ten portions were placed in nutrient gelatin and kept there for a month. In only one did any change occur, and in that a colony of *Bacillus subtilis* developed within twenty-four hours. This specimen had been contaminated either during or after the operation. The other nine specimens showed that the tissues were free from bacteria and their spores. It is evident from the foregoing that the dead tissues of a foetus in the abdominal cavity of the mother will not give rise to suppuration in the absence of pathogenetic bacteria. The changes which are probable are that there will be an increase of white blood-cells in the circulation of the mother with a gradual wearing away of the foetal parts, or there will be mummification or calcification. Suppuration of the foetus can only take place in case there are pathogenetic microbes in the circulation of the mother, but the statistics of Bandl, Hecker, and Parvy show that this is of common occurrence. The foetus may become infected in three ways: (1) by some means occurring before its death, (2) by simple, self-infection, (3) by infection through contiguity of pus microbes or their spores, proceeding from an old collection of pus. The last mentioned is the most common method by which infection is accomplished—that is, suppuration must occur most frequently through the medium of the tubes. If such a collection of pus is discoverable in the vicinity of an extra-uterine foetus, antiseptic drainage should be carried out as in any other abscess cavity. This will frequently be the case when the foetus is destroyed prematurely, or when the ovisac is aspirated.

The Cæsarean Section and its Position with Reference to Artificial Abortion, Turning and Perforation in connection with the Narrow Pelvis.—Leopold ("Ctrlbl. f. Gyn.," May 12, 1888). The author's views and those of his assistants are embraced in this publication, the work being based upon the abundant material of the Dresden Maternity. The first section is edited by L. Korn, and treats of artificial abortion, based upon the history of forty-five cases in which abortion was produced on account of narrow pelvis. In thirty-five of these cases the mothers made uninterrupted recoveries, in nine there was fever lasting from one to three days, and one died from sepsis. Korn's opinion is that, in the equally faulty pelvis, with *conjugata vera* to 7.5 centimetres, and in the pelvis without transverse contraction, with *conjugata vera* to 7 centimetres, artificial abortion should be produced between the thirty-second and the thirty-sixth weeks of pregnancy. If this point has been passed, one should wait for the action of the natural forces, and, if these fail, the practice should be turning and extraction, or forceps and perforation. On the last point Löhmann speaks decisively, analyzing five thousand nine hundred and sixteen cases of labor, in which there were one hundred and seven in which internal turning was performed. His plan in the equally faulty pelvis with *conjugata vera* to 7.5 centimetres, and in the shallow pelvis with *conjugata vera* to 7 centimetres, if the children are only of the average size, is to leave the case to the natural forces. Should operative procedures be necessary, then turning and extraction, or possibly forceps and perforation, are to be practiced. Should a woman with such a pelvis become pregnant a second time, artificial abortion should be performed, the prognosis being bad for the child.

Präger gives an account of more than seventy-one craniotomies which have been performed in the Dresden Maternity during the past four years. His conviction is that craniotomy, performed antiseptically, shows far better results than the Cæsarean section under similar precautions, of course with reference to the mother's life.

The chapter on the Cæsarean section is by Leopold. During the last four years this operation has been performed twenty-three times in his service. He raises the question whether, with modern improvements, we are justified in substituting in all cases this operation for that of perforation. It must ever be remembered that Cæsarean section means laparotomy, and must ever be a very serious operation even in the most skillful hands. It is indeed a fine thing to be able to save both mother and child by operative measures; but, if the indications for such measures are not clear, one should perforate, and do it at an early stage of labor. The comparative statistics of the various operations performed in Leopold's service are as follows:

Artificial abortion gave a maternal mortality of 2.2 per cent. Turning and extraction, 4.8 per cent. Perforation, 2.8 per cent. Cæsarean section, 8.6 per cent. Of the fatal cases which resulted from infection

there died from artificial abortion 2.2 per cent., from turning and perforation 0, from perforation 0, from Cæsarean section 4.3 per cent. The foregoing figures indicate that the greatest number of mothers die from the Cæsarean section. With reference to the children, after artificial abortion 66.6 per cent. were saved, after turning and extraction 59 per cent, and after Cæsarean section 87 per cent. With reference to the latter operation, attention is called to the fact that improvement in the suturing of the uterus is still possible, whereby the possibility of future conceptions shall not be removed nor endangered.

Creoline in Obstetrical Practice.—Baumm ("Ctrlbl. f. Gyn.," May 19, 1888). The result of this author's investigations is given in the following conclusions:

1. Creoline in the form of lotions, uterine and vaginal injections, is adapted for the prevention and treatment of puerperal diseases, quite as well as the antiseptics which have been in use up to the present time.

2. Perineal tears and injuries to the mucous membrane heal surprisingly well by treatment with this agent.

3. Cracks and excoriations of the nipples do not heal as well under one half per cent. applications of creoline as with weak sublimate solutions—1 to 8,000 to 10,000.

4. The absence of poisonous qualities in creoline is not yet positively determined. If a stronger than a two-per-cent. solution is used upon mucous membranes and parts which have a very sensitive epidermis, violent burning will be caused which may lead to the development of erythema. For disinfection of the hands a two-per-cent. solution of creoline is decidedly more pleasant than sublimate or carbolic-acid solutions. The want of transparency of creoline solutions forms an objection to its use for holding instruments, especially needles. Elastic catheters are attacked by creoline in the same way that they are by carbolic acid. The hæmostatic influence of creoline has not yet been determined. Two-per-cent. solutions have been found very effective in destroying *pediculi pubis*, which is an important fact for lying-in institutions. Creoline is also a very cheap antiseptic and is worthy of the attention of obstetricians and of further investigation.

The Relation between Mental Disease during the Puerperium and Puerperal Infection.—Hansen ("Ctrlbl. f. Gyn.," May 19, 1888). The aim of this paper is to show that puerperal infection, which is supposed by most modern writers to have an influence only in occasional instances in producing the puerperal psychoses, has a very decided influence. Until Fürstner's paper (1875) it was not supposed that puerperal psychoses had any particular symptomatic importance; he, however, described an insanity with hallucinations of puerperal women, and the author accepts his description of the disease as it is commonly seen. The author has succeeded in collecting 49 cases of puerperal psychosis, of which 21 came under his personal observation. In not less than 42 of the 49 were there evidences that puerperal infection had been at work, the evidence being obtained by personal communication with the physicians and midwives who had attended the cases. Of the 42 cases in which infection was traceable, 12 had a fatal issue. The pathognomonic sign in the 42 cases of infectious psychosis was acute mania with hallucinations. The hallucinations caused great motor restlessness and anxiety with a subsequent stage of depression or stupidity, in which there was often an exacerbation of the first stage. No boundary-line could be drawn between febrile delirium during the puerperium and puerperal psychoses. While the latter may occur in some cases in the febrile stage, in others before the occurrence of fever, and in others in the post-febrile stage, we must seek for a universal cause for them, whether fever be present or absent. In seven cases in which puerperal infection could not be shown there were two cases of eclampsia with mania and hallucinations of short duration. In the other five there were simple melancholy, hysterical mania, etc. With the exception of the eclampsia, there was no ætiological factor of importance excepting the puerperal infection. The important suggestion in connection with this subject is that prophylaxis is all-essential.

The Influence of Nutritive upon the Supply and the Nutritive Character of Woman's Milk.—Zaleski ("Ctrlbl. f. Gyn.," May 26, 1888). The author found, by analysis of a portion of milk which was taken from a wet-nurse, that it contained six per cent. of fat, or double the usual quantity. Further investigation showed that the child who was suckled

by this nurse was in a very bad condition of nutrition, diarrhoea and loss of weight supervened, and it was found that the milk which was given was scarcely digestible. It was believed that all these disturbances were due to too great concentration of the milk, the nurse being fattened by a too free use of beer and too little exercise. A change of diet, moderate use of meat, dilution of the beer with water, and abundant exercise in the open air led to a diminution in the quantity of fat in the milk and an increase in milk-sugar. From that time the child began to improve and thrived well subsequently. The conclusions which were drawn from this case and from experiments upon cows and other animals were:

1. Woman's milk which is very rich in fat can have a very harmful effect upon the nutrition of the child who feeds upon it.

2. A diet which is composed almost exclusively of albuminous elements will increase to a perceptible degree the fat in woman's milk, diminish the quantity of milk-sugar, and has a bad effect in other ways; a similar result may follow the use of alcoholic liquors.

3. By proper diet and nutriment a desired condition of the milk which is indispensable for the proper nutrition of a child can be obtained within certain limits.

4. The influence of the general condition upon the milk supply is the same in human beings as in animals.

5. The fat in milk is probably obtained, to a considerable extent, either directly or indirectly, from albuminous foods.

A Case in which the Death of the Fœtus occurred before the Rupture of the Membranes; Cæsarean Section while the Mother was Moribund; Schultze's Method of Resuscitation practiced, the Autopsy revealing an Abundance of Air in both Lungs.—Wiercinsky ("Ctrlbl. f. Gyn.," June 9, 1888). The foregoing long title gives a brief and comprehensive account of the facts brought out in the author's paper. The conclusions reached are the following:

1. The air which was found in the child's lungs reached them exclusively by the exercise of Schultze's method, for while it was within the uterus no air could have been obtained, the membranes being intact, and after its birth it did not once breathe. Those who saw the child immediately after it was removed by the Cæsarean section believed that it was born dead.

2. By means of Schultze's method air can be forced into the stomach, and even into the upper portions of the small intestine.

3. The fœtal apnoea in this case was uninterrupted; in other words, the child while within the uterus made no attempts at breathing of a dyspnoeal character, for, as the autopsy showed, the large vessels in the thoracic cavity were almost empty, and all the air-passages were free from foreign matter.

4. This case shows, in support of clinical experience, that when the mother's blood is deficient in oxygen the fœtus will die asphyxiated before the mother.

5. An autopsy upon a child who has died slowly from suffocation *in utero* shows rather a universal œdema with serous transudation into the serous cavities, than the conditions which usually characterize asphyxia—namely, repletion of the heart and the venous system, hyperæmias, ecchymoses, etc.

A Contribution to the Anatomy of Extra-uterine Pregnancy.—

Berry Hart ("Ctrlbl. f. Gyn.," June 16, 1888, and "Edinburgh Med. Jour.," October, 1887.) The author had the great good fortune to be able to make frozen sections upon the bodies of two women who died during extra-uterine pregnancy. In the first case laparotomy was performed ten hours before death, but the abdomen was quickly closed when the operator found that the ovisac had ruptured at a low point in the posterior layer of the broad ligament, development having proceeded between the rectum and the vagina. The pregnancy had nearly reached the sixth month. The author removed the bony pelvis with its contents *in situ*, and after freezing it made three sections through it, a median, a right, and a left side—all in a sagittal direction. The median section included the fœtus and placenta in a sac, which was bounded above by the folds of the right broad ligament, below by the basal connective tissue of that ligament and the paraproctal tissue. The top of the sac lay in the plane of the superior strait of the pelvis. The placenta, 8·7 centimetres long and 4·1 centimetres thick, lay above between the folds of the ligaments, the fœtus being under it. The left section

showed the uterus and a large hæmatoma between the peritonæum and the rectum, also the rupture at the lower portion of the posterior layer of the broad ligament. The uterus contained a well-formed decidua. The left tube and ovary were intact. The preparation also showed that the ovisac, originally tubal, had developed between the layers of the broad ligament into the connective tissue between the rectum and peritonæum, and that before its rupture it was entirely extraperitoneal.

In the second case, that of a prostitute, seven sections were made in a sagittal direction through the pelvis, abdomen, and thorax. They showed hypertrophy of the wall of the left ventricle of the heart; very high position of the diaphragm, caused by the ovisac, which was pushed upward by the abdominal walls, and dilatation of the left ureter and the pelvis of the left kidney. The small intestine was compressed to the left side. The distended transverse colon and the mesentery were adherent to the abdominal wall and below to the ovisac. In this case also the ovisac was entirely extraperitoneal, encroaching upon the connective tissue. It occupied a large portion of the abdominal cavity, especially upon the right side, and extended upward as far as the second lumbar vertebra. The uterus lay displaced to the left in front of the ovisac; between the latter and the abdominal wall was a double layer of peritonæum. The peritonæum was stripped from the entire posterior and a portion of the anterior wall of the uterus; from the fundus strips of tissue proceeded to the inner wall of the ovisac. On the left side a small peritoneal fold surrounded the left tube and ovary; on the right side these organs formed a portion of the posterior wall of the sac. The peritonæum extended in front of the uterus to the upper border of the symphysis; under it lay the bladder, only the lower portion of the anterior surface of the uterus being covered by peritonæum. The fundus of the uterus, showing no trace of peritoneal covering, extended to the ovisac. The layers of the right broad ligament were unfolded to an enormous extent, while on the left side the peritonæum extended from the fundus laterally upon the ovisac. Douglas's pouch lay at the point of junction of the fourth and fifth sacral vertebrae. On the right side of the body the cæcum and peritonæum were pushed high up. The ovisac had at its upper portion unstriated muscular fiber and peritonæum, below only connective tissue. The uterus was much enlarged, being seven inches and three quarters long, the cervix long as in cases of prolapse. Between the cervix and the posterior wall of the pelvis lay the fœtus, the placenta being above it. The latter was a smooth, oval mass, partly attached to the anterior abdominal wall, where it was bared of peritonæum, and partly to the peritonæum. On the right side between the placenta and the sac-wall was a large cavity filled with gas and decomposing blood, and at the upper limit of the cavity the rupture had taken place. The fœtus weighed two pounds and four ounces, and was probably in the eighth month of development. The placenta had undergone degenerative changes. The author expresses his views on extra-uterine pregnancy, based upon these studies, as follows: Tubal pregnancy may be intra-ligamental, described by Werth, or subperitonæo-pelvic, described by Dezeimeris. As the fœtal sac enlarges, the peritonæum is more and more unfolded, until the sac lies entirely in the abdominal cavity. When this situation is reached, the author suggests the name subperitonæo-abdominal gestation for the condition, and he has not yet seen sufficient evidence to believe that ovarian or intraperitoneal gestation occurs. In the subperitonæo-abdominal form the placenta undergoes changes which endanger the life of the fœtus. In the treatment of such cases reference should be had chiefly to the interests of the mother. The placenta should be allowed to remain *in situ*, though a ligature may be thrown around it to favor its separation.

On the Management of Fibromyomata complicating Pregnancy and Labor.—Phillips ("Brit. Med. Jour.," June 23, 1888). The course of pregnancy, labor, and the puerperium may be modified by fibroids in the following ways:

1. During pregnancy their presence may induce a premature termination, for a tumor in the uterine wall materially interferes with the regular development of that organ.

2. They may set up localized peritonitis, which will produce adhesions with various organs—that is, intestines, liver, and rectum. They may cause such intense pain and distension as to necessitate operative interference at an early period of pregnancy.

3. A tumor may mechanically obstruct the passage of the fœtus through the pelvic canal, and may thus even occasion resort to the Cæsarean section or the Porro-Cæsarean operation.

4. Frequency of fœtal malposition is very common, and leads to increased infant mortality.

5. After the birth of the child the placenta may be found adherent to the tumor, rendering manual delivery necessary, and consequent bruising of its substance. Placenta prævia is more frequently found as a concomitant of fibroids.

6. Uterine contraction after expulsion of the placenta may be more or less inefficient, owing to the presence of the tumor, and hæmorrhage may result. Involution is also much delayed.

7. Morbid softening and disintegration may take place either before or after labor, leading to peritonitis and its attendant evils. Torsion of the pedicle and subsequent gangrene of the tumor have been observed.

Lefour's thesis in 1880 published reliable accounts of 300 cases in which pregnancy had been interfered with by myomata. The author has collected 59 additional cases since that date, in which no operative interference was attempted, and 47 others in which an abdominal operation was performed.

The methods of treatment during the early months of pregnancy are the assumption of the genu-pectoral position, enucleation *per vaginam*, induction of artificial abortion, and reposition of the tumor during anæsthesia. To these methods may be added the graver ones of myotomy and "Müller's ablation." The first of these is permissible (1) when the fibroid is attached in an accessible situation; (2) when its presence is causing either intolerable pain or discomfort from distension. Five cases of this operation have been found by the author, 2 of which were fatal. Of the method denominated "Müller's ablation"—that is, abdominal section with the removal of the tumor and the uterus containing the non-viable fœtus—19 cases are recorded, 7 of which were fatal. Of the 19 cases, 13 were treated by the extraperitoneal method with 9 recoveries, and 6 by the intraperitoneal method with 3 recoveries.

Concerning the treatment of fibromyomata during fœtal viability, Lefour found 6 cases in which labor was induced, 1 mother dying and 1 living child being born. Premature induction of labor for such cases is strongly urged by Playfair, while Mundé, Braxton Hicks, and Lomer report each a case in which the tumor (fibroma of the cervix) was removed *per vaginam* during labor.

Comparing the dangers of the Porro-Cæsarean operation with those of Cæsarean section, 6 principal ones appear as the causes of death in the latter—namely, peritonitis, metritis, hæmorrhage, septicæmia, shock, and intestinal obstruction—while in the former they are peritonitis, septicæmia, shock, and intestinal obstruction. Of the 66 cases in Lefour's table, in which labor terminated without assistance, 32 ended fatally. Of 35 cases of version, 21 were fatal. The fatal results after forceps operations were 25.9 per cent., and after embryotomy 55.5 per cent. The fœtal mortality after version was 77.7 per cent., all of which facts show how dangerous fibromyomata are as a complication to pregnancy and labor.

The Relation between Albuminuria and Disease of the Placenta.—Wiedow ("Ztsch. f. Geb. u. Gyn.," xiv, 2) remarks that Simpson rendered an opinion in 1860 that albuminuria could cause disease of the placenta and subsequent death of the fœtus, and that it had been observed in several successive pregnancies in the same woman. This opinion is shared by Tait and Tyler Smith, and cases are narrated in support of the opinion. Other authors, including Winckel, Lachapelle, Litzmann, Lange, Braun, and Wieger, have observed the co-existence of albuminuria and placental disease with death of the fœtus, but have not decided that there was a causal relation between them. Recently, Fehling has reported the histories of five women in which the placenta was the seat of the so-called white infarctions, there was miscarriage with the extrusion of a dead fœtus, and these conditions were complicated with nephritis. The author also contributes six cases which sustain the views of Fehling. The opinions of authors in regard to the origin of the white infarctions referred to vary. Simpson, Rokitsansky, and d'Outrepoint

consider that they are the result of inflammation; Meckel and Scanzoni regarded them as representing the final stages of an effusion of blood. Hegar and Maier regard the condition as an interstitial placentitis. Ackerman considers it a coagulation-necrosis resulting from periarteritis of the vessels of the placenta, and Küstner a coagulation-necrosis of all the tissues which take part in the formation of the placenta. The author looks upon the white nodules in the placenta as the product of a coagulation-necrosis of the epithelium of the villi rather than as a product of fibrin. It is much more difficult to decide as to the relation between the placental disease and albuminuria. It can not be a merely accidental one, for the number of such cases is too great. In general, one must agree with Simpson and Fehling that the placental disease is the consequence of albuminuria. Clinical histories and post-mortem findings sustain this view in many cases. Opposed to it are the facts that in most of the reported cases the kidneys are only such as one is accustomed to find during pregnancy; also that even in cases in which the kidneys are seriously diseased we may find normal placenta. In some cases the first evidences of kidney disease do not appear until after the death of the fœtus. In other cases the expulsion of the fœtus follows immediately after the appearance of albuminuria, and we find changes in the placenta the beginnings of which we must refer to a period long anterior to the occurrence of the clinical symptoms. If nephritis is assumed as a cause, it is also unintelligible that in cases of twins one placenta is diseased while the other remains healthy. It might be assumed in those cases in which the fœtus has died that after its death certain substances were transferred to the mother's circulation which produced the kidney disease, but this is purely an hypothesis. Without being able to reach a positive conclusion, it may also be assumed as possible that it is not a causal relation which subsists between the two diseases, but only one of time, and this may serve as a clew to further investigations.

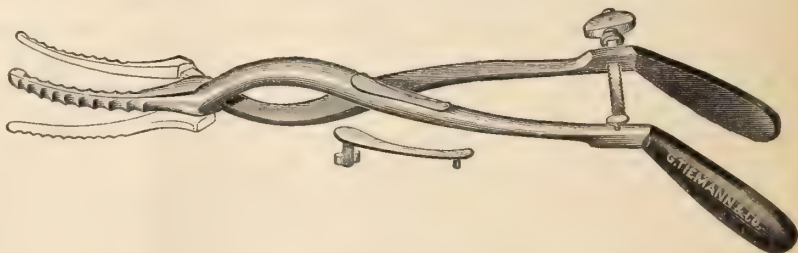
New Inventions, etc.

UTERINE DILATOR.

BY WILLIAM H. WATHEN, M. D.,
LOUISVILLE.

At the meeting of the Ninth International Medical Congress, September, 1887, I read a paper on rapid dilatation of the cervix uteri, and exhibited a dilator of my device. In explaining its superiority, I made the following statement:

"It is claimed for Goodell's dilator that, the blades being parallel, it dilates all parts of the canal equally. This is true in theory only, for the elasticity of the blades is greatest at the ends, while the greatest



resistance is in the upper part of the cervix, so that when the external os is dilated an inch and an eighth, the internal os is dilated not more than an inch. The reverse should be true, for the part that most needs to be acted upon is generally near the uterine body. My dilator is more powerful, less complicated, and will not slip out of the uterus so easily when expanding, and when it dilates the external os seven eighths of an inch, the internal os will be open about an inch."

This dilator, as now manufactured by Messrs. Tiemann & Co., has been much improved, and to its superior qualities has been added a principle that makes it as perfectly aseptic as it is possible to have any

surgical instrument. The blades are held together by a modified French lock that admits of the instrument being separated into its different parts in a few seconds, so as to be easily cleaned and made aseptic. This is the only dilator that is made after this fashion, and, as the handles are of vulcanized rubber, hermetically sealed over the steel, there is no place where it is possible to have poisonous matter retained after any reasonable degree of surgical cleanliness.

Miscellany.

The American Association of Genito-urinary Surgeons will hold its second annual meeting in Washington on the 18th, 19th, and 20th of September. The programme contains the following announcements:

"Pyæmia as a Direct Sequel of Gonorrhœa," by Dr. Roswell Park, of Buffalo, N. Y.; "Clinical Observations on Gonorrhœa, with Special Reference to Ætiology, Duration, and Treatment," by Dr. John P. Bryson and Dr. Edwin C. Burnett, of St. Louis, Mo.; "Retrojections in Gonorrhœa," by Dr. Edward R. Palmer, of Louisville, Ky.; "Local Treatment of Chronic Urethral Discharges," by Dr. Frederick R. Sturgis, of New York; "On the Relation of the Prostate to Chronic Urethral Discharges," by Dr. J. William White, of Philadelphia, Pa.; "The Diagnosis and Treatment of Chronic Urethritis, with Demonstrations of Instruments," by Dr. Oberländer, of Dresden, Germany, to be read by Dr. John A. Fordyce (by invitation); "Connection between Masturbation and Stricture of the Urethra," by Dr. Samuel W. Gross, of Philadelphia, Pa.; "The Curability of Urethral Stricture by Electricity: an Investigation," by Dr. Edward L. Keyes, of New York; "On the Radical Cure of Stricture of the Urethra by Dilating Urethrotomy," by Dr. Fessenden N. Otis, of New York; "The Prognosis of Stricture based on Thirty Years' Death Record at the London Hospital and the Practice at St. Peter's Hospital," by E. Hurry Fenwick, F. R. C. S., of London, England (by invitation); "Some Points on the Ætiology of Stricture of the Urethra," by Dr. Robert W. Taylor, of New York; "The Operative Treatment of Hypertrophy of the Prostate, with Stereopticon Demonstrations of Specimens, etc.," by Dr. Francis S. Watson, of Boston, Mass.; "Prostatotomy for Enlarged Prostate at the Age of Forty-two Years," by Dr. Abner Post, of Boston, Mass.; "The History of the *Filaria Sanguinis Hominis*: its Discovery in the United States, and especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis," by Dr. William M. Mastin, of Mobile, Ala.; "Clinical Observations on Diseases of the Testicle," by Dr. L. Bolton Bangs, of New York; "Case of Removal of Both Testicles for Recurrent Carcinoma," by Dr. Frank W. Rockwell, of Brooklyn, N. Y.; "Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and other Instruments," by Dr. Alexander W. Stein, of New York; "Demonstration of a Perfected Evacuator and an Improvement in the Method of Removal of Débris from the Bladder," by Dr. Fessenden N. Otis, of New York; "Stone in the Bladder in Connection with Splenic Leuchæmia," by Charles Williams, F. R. C. S., of Norwich, Eng. (by invitation); "Litholapaxy in Male Children," by Surgeon-Major Keegan, of Indore, Central India (by invitation); "Case of Perineal Section for Traumatic Retention—Unusual Condition of the Bladder," by Dr. J. Edwin Michael, of Baltimore, Md.; "Operations on the Kidney," by Dr. William H. Hingston, of Montreal, Canada; "On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis," by Dr. George Chismore, of San Francisco, Cal.; "Case of Nephro-lithiasis, complicated with Hydro-nephrosis, in which Lumbar Nephrotomy was performed," by Dr. Frank W. Rockwell, of Brooklyn, N. Y.; "Malignant Tumors of the Seminal Vesicles: Two Cases with Specimens," by Dr. John P. Bryson, of St. Louis, Mo.; "Case of Bowel ending in the Urethra of a Child Four Weeks Old—Relief by Operation," by Dr. Arthur T. Cabot, of Boston, Mass.; "Unusual Case of Urethral Calculus," by Dr. Harvey G. Mudd, of St. Louis, Mo.; "The Congenital Anomalies of the External Urethral Orifice," by Dr. C. Kaufmann, of Zürich, Switzerland (by invitation); "The Prophylaxis of Syphilis," by Dr. Prince A. Morrow, of New York;

"Syphiloma of the Vulva," by Dr. J. Nevins Hyde, of Chicago, Ill.; "The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis," by Dr. J. William White, of Philadelphia, Pa.; Papers by Dr. Félix Guyon, of Paris, France, Dr. Freund, of Strasburg, Germany, and others.

The Lehigh Valley Medical Association.—The eighth annual meeting was held at Paxinosa Inn, the new summer resort situated on a hill some six hundred feet above the Delaware River, just north of Easton, Pa., on Wednesday, the 15th inst. The beauty of the view, excelling in some respects those of the far-famed Water Gap, was a surprise to most of the visitors and a source of continual enjoyment. The view was almost unique in that it extended in every direction and afforded variety as well as beauty. Leaving the ladies to enjoy the beauties of nature, the members of the association, to the number of sixty or seventy, assembled in the parlor of the inn. The address of the retiring president, Dr. W. B. Erdman, of Macungie, treated largely upon quackery. Those entering the profession from purely sordid motives, having failed to recognize the principles on which permanent success was founded, would either miss their aim and fall by the wayside, or, abandoning all pretense of regular and honorable conduct, would embark upon the vessel of quackery. The speaker then proceeded to make a study of this sort of person, showing that he thrived in the days gone by, that he still continued to thrive, using the old ways or inventing new ones, as the success of his ventures might demand. He attributed the success of quackery to the lack of knowledge on the part of the people, and the influence of novelty and mystery these "isms" produced. It was the duty of the true physician to aid in correcting this abnormal condition of affairs; this he could do, in part at least, by thoroughness of preparation, honesty of purpose, and integrity of character.

The annual address was delivered by Dr. T. J. Mays, of Philadelphia, who selected for his subject "The Treatment of Lung Cavities." Dr. Mays stated that he selected this subject because of its frequency and of the prevalent idea that nothing could be done for it. He began by giving a clear statement of the pathology of the subject condition. As to treatment, it must be remembered, as cardinal principles, 1, that it, as well as the disease of which it formed a part, was inherently a process of necrosis, of mortification; 2, that not only its size but its existence depended on the degree of local and constitutional resistance. It was stated, as a rule, that a patient with a quiescent cavity was more desirable than one who had an infiltrated lung. The special indications for treatment, as enumerated, were: 1, fever; 2, anorexia; 3, wasting; 4, harassing cough and expectoration; 5, loss of sleep; 6, diarrhoea; 7, hæmoptysis. Among the antipyretics, antipyrine was recommended, although inhalations of certain antiseptics acting upon the inflamed part often had a favorable influence upon the fever. Ichthyol administered through a respirator, in a strength of 25-per-cent. aqueous solution, was spoken of with favor for this purpose. Alimentation should be made a matter of careful study; here often the cook assumed the greatest importance. The morning cough, which was so often apt to be distressing and fatiguing, would continue until the cavity was emptied. A position in which the head was lowered—as if one were tying a shoe—would often hasten its removal. For hæmoptysis the use of the fluid extracts of hamamelis and geranium—one part of the former to three of the latter—in teaspoonful doses every hour or two, or oftener if necessary, was especially commended. Pulmonary gymnastics were mentioned to be urged as a very great aid in treatment.

Dr. George N. Best, of Rosemont, N. J., was elected president for the ensuing year, and the executive board was instructed to arrange for a winter meeting, more especially for the discussion of medical subjects; this it afterward did, the meeting to be in Allentown late in January. The business portion of the session finished, there remained the social reunions, so highly enjoyed on these occasions, and the dinner, which a country doctor uniformly enjoys if it is good and uniformly praises if there is a bountiful supply. Suffice it to say that the enjoyment was only limited by the appetite, and the praise was unstinted. And as the afternoon buses took them to their trains, there was a feeling of gratulation that Paxinosa Inn seemed to promise such an excellent retreat for the convalescent or the fatigued.

The American Dermatological Association will hold its twelfth annual meeting at Willard's Hotel, in Washington, on the 18th, 19th, and 20th of September. The programme contains the following papers: Address, by the President, Dr. I. E. Atkinson; "The Electrolytic Decomposition of Organic Tissues," Dr. G. H. Rohe; "The Value of Salicylic Acid in Dermatology," Dr. Heitzmann; "Hereditary Dermatoses," Dr. J. C. White; "A Report of Four Cases of Dermatitis Herpetiformis," Dr. J. E. Graham; "Dermatitis Herpetiformis, with Notes of Three Cases," Dr. H. W. Stelwagon; "Personal Observations on Skin Diseases in the Negro," Dr. R. B. Morison; "Note of a Case of Filaria Medinensis," Dr. A. Van Harlingen; "So-called Acne Anthracoides Iodopotassique," Dr. R. W. Taylor; "Note relative to the Vegetative Lesions induced by Ingestion of some of the Iodine Compounds," Dr. J. N. Hyde; "Notes on some Unusual Cases of Skin Disease," Dr. W. A. Hardaway; "A Contribution to the Clinical History of Alopecia Areata," Dr. A. Van Harlingen; "The Non-identity of Lichen Planus and Lichen Ruber," Dr. G. H. Fox; "The Question of Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson)," Dr. A. R. Robinson; "Multiple Pigmentary Sarcoma," Dr. E. B. Bronson; "Dermatitis Plantaris and Palmaris," Dr. L. Duncan Bulkley; "Raynaud's Disease and Symmetrical Gangrene in Late Syphilis," Dr. R. W. Taylor; "The Relations of Framboesia to Syphilis and Tuberculosis of the Skin, with Report of a Case," Dr. P. A. Morrow; "Kraurosis of the Vulva (Breisky)," Dr. C. Heitzmann; "Molluscum Contagiosum, a Clinical Report," Dr. H. W. Stelwagon.

The Honorary Degree of LL. D.—According to the "Glasgow Herald," the Senatus Academicus of the University of Glasgow unanimously resolved to confer the honorary degree of Doctor of Laws on the following gentlemen, in connection with the meeting of the British Medical Association: Sir William Aitken, M. D., F. R. S., Netley; Thomas Clifford Allbutt, M. D., F. R. S., Leeds; Professor Ball, Paris; John T. Banks, M. D., D. Sc., Dublin; Fordyce Barker, M. D., New York; Professor Benedikt, Vienna; Thomas Bridgwater, M. B., M. R. C. S. Eng., Harrow; John Macintyre, M. D., Odiham, Hants; Inspector-General Maclean, M. D., C. B., Netley; James Morton, M. D., President of Faculty of Physicians and Surgeons, Glasgow; Surgeon-General Munro, M. D., C. B., London; Frederick William Pavy, M. D., F. R. S., London; Sir George H. Porter, M. D., Dublin; David Yellowlees, M. D., Royal Asylum, Gartnavel.

Quarantine Laws and Regulations.—Dr. John B. Hamilton, Supervising Surgeon-General of the Marine-Hospital Service, has issued the following circular for the information of persons concerned in the execution of quarantine laws:

SECTION 4792, REVISED STATUTES OF THE UNITED STATES.

The quarantines and other restraints established by the health-laws of any State, respecting any vessels arriving in, or bound to, any port or district thereof, shall be duly observed by the officers of the customs revenue of the United States, by the masters and crews of the several revenue-cutters, and by the military officers commanding in any fort or station upon the sea-coast; and all such officers of the United States shall faithfully aid in the execution of such quarantines and health-laws, according to their respective powers and within their respective precincts, and as they shall be directed, from time to time, by the Secretary of the Treasury. But nothing in this Title shall enable any State to collect a duty of tonnage or impost without the consent of Congress.

NATIONAL QUARANTINE ACT.

AN ACT to prevent the introduction of contagious or infectious diseases into the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That no vessel or vehicle coming from any foreign port or country where any contagious or infectious disease may exist, and no vessel or vehicle conveying any person or persons, merchandise or animals, affected with any infectious or contagious disease, shall enter any port of the United States or pass the boundary line between the United States and any foreign country, contrary to the quarantine laws of any one of said United States, into or through

the jurisdiction of which said vessel or vehicle may pass, or to which it is destined, or except in the manner and subject to the regulations to be prescribed as hereinafter provided.

SEC. 2. That whenever any infectious or contagious disease shall appear in any foreign port or country, and whenever any vessel shall leave any infected foreign port, or, having on board goods or passengers coming from any place or district infected with cholera or yellow fever, shall leave any foreign port, bound for any port in the United States, the consular officer, or other representative of the United States at or nearest such foreign port, shall immediately give information thereof to the Supervising Surgeon-General of the Marine-Hospital Service, and shall report to him the name, the date of departure, and the port of destination of such vessel; and shall also make the same report to the health officer of the port of destination in the United States, and the consular officers of the United States shall make weekly reports to him of the sanitary condition of the ports at which they are respectively stationed; and the said Surgeon-General of the Marine-Hospital Service shall, under the direction of the Secretary of the Treasury, be charged with the execution of the provisions of this act, and shall frame all needful rules and regulations for that purpose, which rules and regulations shall be subject to the approval of the President, but such rules and regulations shall not conflict with or impair any sanitary or quarantine laws or regulations of any State or municipal authorities now existing or which may hereafter be enacted.

SEC. 3. That it shall be the duty of the medical officers of the Marine-Hospital Service and of customs officers to aid in the enforcement of the national quarantine rules and regulations established under the preceding section; but no additional compensation shall be allowed said officers by reason of such services as they may be required to perform under this act, except actual and necessary traveling expenses.

SEC. 4. That the Surgeon-General of the Marine-Hospital Service shall, upon receipt of information of the departure of any vessel, goods, or passengers from infected places to any port in the United States, immediately notify the proper State or municipal and United States officer or officers at the threatened port of destination of the vessel, and shall prepare and transmit to the medical officers of the Marine-Hospital Service, to collectors of customs, and to the State and municipal health authorities of the United States weekly abstracts of the consular sanitary reports and other pertinent information received by him.

SEC. 5. That whenever, at any port of the United States, any State or municipal quarantine system may now or may hereafter exist, the officers or agents of such system shall, upon the application of the respective State or municipal authorities, be authorized and empowered to act as officers or agents of the national quarantine system, and shall be clothed with all the powers of United States officers for quarantine purposes, but shall receive no pay or emolument from the United States. At all other ports where, in the opinion of the Secretary of the Treasury, it shall be deemed necessary to establish quarantine, the medical officers or other agents of the Marine-Hospital Service shall perform such duties in the enforcement of the quarantine rules and regulations as may be assigned them by the Surgeon-General of that Service under this act: *Provided*, That there shall be no interference in any manner with any quarantine laws or regulations as they now exist or may hereafter be adopted under State laws.

SEC. 6. That all acts or parts of acts inconsistent with this act be and the same are hereby repealed.

Approved April 29, 1878.

[Extract from Quarantine Act of August 1, 1888.]

AN ACT to perfect the quarantine service of the United States.

(This was published in our issue for August 11th, p. 167.)

[Extract from Regulations of the Marine-Hospital Service. Approved by the President April 24, 1885.]

GOVERNMENT OF NATIONAL QUARANTINES.

322. At ports where quarantine may be established by the Secretary of the Treasury, every vessel, before being permitted to enter, shall present to the collector of customs satisfactory evidence either that said

vessel had not, at any time during a period of thirty days immediately preceding its arrival, touched at or communicated with any foreign port where cholera, yellow fever, or small-pox was known to exist in an epidemic form; that there had not been at any time during that period any case of contagious disease on board; and that said vessel does not convey any person or persons, merchandise, or animals affected with any infectious or contagious disease, or that the said vessel has been thoroughly cleaned and disinfected by the quarantine officer, and is free from infection at the time of entry. The certificate to that effect, of the medical officer of the Marine-Hospital Service, or other agent of the Treasury Department designated by the Secretary of the Treasury to act as quarantine officer for the United States at the port, shall be accepted by the collector of customs as satisfactory evidence, and the medical officer or agent referred to shall, before granting such certificate, satisfy himself that the matters and things therein stated are true.

323. Vessels coming from a foreign port or country where cholera, yellow fever, or small-pox is known to have existed in an epidemic form within thirty days preceding their arrival, and vessels or vehicles conveying any person or persons, merchandise, or animals affected with any contagious disease, or having had on board at any time during the thirty days preceding their arrival any case of contagious disease, shall not enter any port of the United States until such disinfection or other precautionary measures shall have been performed as prescribed by these regulations, and the certificate of the medical officer of the Marine-Hospital Service, or other designated agent of the Treasury Department, shall, in such cases, as in the cases referred to in the preceding paragraph, be accepted by the collector of customs as satisfactory evidence of compliance with said regulations.

324. For the purposes of necessary disinfection of a vessel and its cargo, and of the clothing and baggage of persons on board, the said vessel shall be required to repair to and cast anchor at such place as may be designated by the Secretary of the Treasury, at each port respectively, to be known as the United States Quarantine Station.

325. The disinfection, and other precautionary measures referred to in paragraph 323, shall be carried out under the direction and supervision of the United States quarantine officer at each port respectively, and shall consist of, first, the isolation and treatment of the sick; second, the disinfection of all clothing and baggage liable to be infected; third, the removal of the cargo from the vessel to open lighters, and its thorough disinfection by chemical agents, by exposure to free currents of air, or by burning, as the case may require; and, fourth, the cleansing and fumigation of the vessel, or such other methods of disinfection as may from time to time be adopted by the Department.

[Extract from Regulations prescribed for the information and government of the Consular Officers of the United States. Approved by the President and promulgated by the Secretary of State, February 3, 1888.]

THE QUARANTINE SERVICE.

Section 2 of an act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April 29, 1878, provides—

"That whenever any infectious or contagious disease shall appear in any foreign port or country, and whenever any vessel shall leave any infected foreign port, or, having on board goods or passengers coming from any place or district infected with cholera or yellow fever, shall leave any foreign port bound for any port in the United States, the consular officer, or other representative of the United States at or nearest such foreign port, shall immediately give information thereof to the Supervising Surgeon-General of the Marine-Hospital Service, and shall report to him the name, the date of departure, and the port of destination in the United States, and the consular officers of the United States shall make weekly reports to him of the sanitary condition of the ports at which they are respectively stationed."

The object of the foregoing section of the law is to secure timely advice of the outbreaks of cholera and yellow fever, and of the probable transportation of the poisons of these preventable diseases in vessels bound for the United States; and consular officers for the United States are directed to put themselves into communication with the

health authorities of their respective stations, and from the information obtained from such authorities, or from other reliable sources where no regularly constituted health authorities exist, to prepare and transmit by the mails to the Department of State, for the information of the Surgeon-General of the Marine-Hospital Service, on forms prescribed by the Department, weekly reports of the appearance, progress, or termination of cholera, yellow fever, small-pox, plague, or typhus occurring in their respective localities, and are further instructed to include in said reports information in relation to the prevalence of other preventable diseases, as diphtheria, enteric and scarlet fevers, etc., the prevailing disease or diseases in port, if any, and, when practicable, the annual death-rate per one thousand of the population as shown by the official record of deaths for the week reported. Special interest should be taken in the healthiness of vessels, reporting those arriving from or departing to the United States in a bad sanitary condition; also reporting the facts of any serious sickness or unhealthiness of seamen in port, or of crews arriving from or departing to the United States.

In the event of the outbreak of Asiatic cholera, yellow fever, or Asiatic plague, or other contagious disease in epidemic form, the Department must immediately be advised by cable or telegraph of such outbreak, using such abbreviation as the Department may from time to time direct.

The following cipher and abbreviations should be used:

"Cholera"—meaning cholera has appeared.

"Yellow"—meaning yellow fever has appeared.

The name of a country—meaning that the disease has made its appearance at several places in the country named.

The name of a vessel—meaning that the vessel named has departed from the place whence the dispatch is sent, bound for a port in the United States.

"Poison"—meaning that the vessel referred to, though leaving a then healthy port, has on board passengers or goods (baggage) coming from a district infected with cholera or yellow fever.

When cholera or yellow fever has appeared at several places in a country, name the country only after the word "cholera" or "yellow," as the case may be; if it has appeared at the place only from which the dispatch is sent, do not repeat the name of that place in the body of the dispatch, but if at any other particular place, name it.

In a dispatch announcing the departure of a vessel to a port in the United States, the port of departure will be understood to be the place from which the dispatch is sent; hence the name of the port of departure need not be repeated. In the body of a dispatch the name of the vessel should be given first; second, the name of the country, when applicable; third, the day of departure, omitting the day of the month and of the year, as they will be understood without saying; fourth, the name of the port of destination (the importance of observing this order will appear obvious when it is understood that many vessels bear the names of ports in the United States); fifth, the name of the disease, "cholera" or "yellow," as the case may be, should be given, provided the Department has not been already advised of the outbreak of the disease. When advice has once been given of the appearance of cholera or yellow fever at a certain port, the name of the disease need not be repeated in dispatches announcing the subsequent departure of vessels from that port.

When the name of a vessel is given without stating whether it is a steamer or sailing-vessel, it will be understood to be a steamer; if the vessel is a sailing-vessel, its proper designation should be prefixed. The sender of the dispatch should sign his last name only.

The consul will give to every master of a vessel bound to a port in the United States a bill of health, on the form prescribed by the Department, giving full information of the number of persons on board such vessel at the time of sailing, and the sanitary condition of the vessel so far as known, and also the sanitary condition of the port of departure at the time. At such ports as may from time to time be designated by the Department, a physician will be employed or detailed to make the necessary inspection of the vessel, her passengers, crew, cargo, and ballast. In case the master of any vessel shall refuse to receive a bill of health, the fact shall be immediately reported to the Department by cable, if necessary.

When a vessel having received a bill of health touches at any other

port while *en route* to the United States, the consul at such port shall *visa* the bill of health, and note thereon such changes as may have taken place since its original issue.

Monthly reports of the bills of health issued must be made to the Department on the regular forms.

REGULATIONS FOR THE GOVERNMENT OF OFFICERS OF THE REVENUE-MARINE SERVICE.

The Secretary of the Treasury issued the following circular, under date of June 4, 1888:

In order to assist local authorities in the maintenance of quarantine against the introduction of infectious diseases, as provided in section 4792, Revised Statutes, the act of April 29, 1873, and appropriation acts authorizing the President to maintain quarantine at points of danger, the President has determined to establish, by means of the vessels of the Revenue Marine, a national patrol of the coast of the United States, so far as it may be practicable under existing law and consistent with the performance of the other duties confided to that Service.

You are accordingly directed to cruise, actively, with the revenue steamer under your command upon the outer lines of your cruising-grounds, and to exercise special vigilance in speaking all vessels arriving from foreign ports, or from infected ports of the United States, directing your inquiries, first, as to the port from which the vessel sailed, and, secondly, as to the health of those on board at the time of departure, during passage, and at the time of hailing; and should the information gained indicate a condition of contagion or infection in the vessel or crew, or that the vessel has left a port at which contagious or infectious diseases were prevailing, her master will be directed to proceed for examination to the outer quarantine station provided for her port of destination.

The following regulations will be observed relative to the inspection of vessels:

If a vessel be found with sickness on board, or in a foul condition, she will be directed to proceed to the quarantine station hereinbefore indicated, and the Revenue-Marine officer will immediately notify the proper quarantine officer. In such case no person will be permitted to board the vessel until the medical officers in charge of the quarantine shall have given the usual permit.

Should the pilot or master of a vessel, when hailed, report cases of recent or present sickness on board, the revenue officer will not board, but will send her immediately to quarantine.

Quarantine officers will be recognized as follows, viz.:

Medical officers or acting assistant surgeons of the Marine-Hospital Service in charge of Gulf, South Atlantic, Cape Charles, or Delaware Breakwater Quarantines, or any officer of said service on duty at any port on the interior rivers, the Great Lakes, or Pacific coast, and all quarantine officers acting under proper State or local authority.

Special regulations to aid local quarantine authorities will be promulgated hereafter should occasion require.

LOCATION OF NATIONAL QUARANTINES.

Delaware Breakwater.

Cape Charles; Hospital at Fisherman's Island; boarding station near Thimble Light.

Sapelo Sound; Blackbeard Island.

Near Key West. (Site not yet determined.)

North Chandeleur Island, Gulf of Mexico (act of March 5, 1888).*

San Diego, Cal. (Site to be determined.)

San Francisco, Cal. (Site to be determined.)

Port Townsend, Wash. (Site to be determined.)

The Health of Boston.—During the week ending Saturday, August 11th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: 18 cases of diphtheria and 7 deaths; 6 cases of scarlet fever and 1 death; 18 cases of typhoid fever and 2 deaths; 1 case of measles. There were also 28 deaths from consumption, 3 from pneumonia, 3 from whooping-cough, 7 from

heart disease, 5 from bronchitis, and 8 from marasmus. The total number of deaths was 228, against 213 in the corresponding week last year.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for the month of July, the whole number of deaths reported was 519, including 3 from alcoholism, 7 from cerebro-spinal meningitis, 32 from cholera infantum, 4 from croup, 3 from dysentery, 7 from diphtheria, 6 from diarrhoea, 1 from erysipelas, 12 typhoid fever, 4 from malarial fever, 1 from leprosy, 1 from pyæmia, 7 from whooping-cough, 1 from syphilis, 3 from scarlet fever, and 2 from small-pox.

ANSWERS TO CORRESPONDENTS.

No. 220.—Beard and Rockwell's "Treatise on the Medical and Surgical Uses of Electricity." Loring's "Text-book of Ophthalmoscopy."

No. 221.—The instrument was described in the "New York Medical Journal" for April 9, 1887, page 393.

No. 222.—Three editions. The fourth edition will be issued early in the coming autumn.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

* The old station at Ship Island will be used until the new buildings on the Chandeleur shall have been completed.

Original Communications.

A DILATING BULBOUS URETHROTOME
(AND URETHROMETER),

ADAPTED TO STRICTURES OF BOTH LARGE AND SMALL CALIBER.

By W. B. ROGERS, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY AND CLINICAL
SURGERY IN THE MEMPHIS HOSPITAL MEDICAL COLLEGE, MEMPHIS, TENN.

NEARLY four years ago I presented at a meeting of the Tri-State Medical Association of Missouri, Arkansas, and Tennessee a urethrotome and urethrometer combined. This instrument was of my own invention, and while at that time it had fulfilled all the requirements of such an instrument, in some six or eight operations, in my hands, yet it was new, and required a longer period of probation before its claims of superiority could be reasonably well pressed upon the profession.

Time has passed—the test has been made in more than a hundred cases, both in private practice and at my college clinics, and I am prepared to urge its claim of superior merit. Laying aside any discussion of stricture of the urethra and its treatment, a brief consideration of urethrotomes in general is the present object of this paper. It can be briefly summed up that urethrotomes that are made to cut during their introduction are not safe in cases of stricture of very small caliber, especially if complicated by false passages, hence the preference by the profession for an instrument that cuts from behind forward. So far as I am posted, those instruments which incise during withdrawal, and which possess dilating powers, both with and without a bulb, are of such diameter that the stricture must be first dilated with some other instrument before the urethrotome can be used, and such being the case, these urethrotomes possess only an imaginary advantage over those cutting during introduction, because the latter can deal safely with strictures of large caliber.

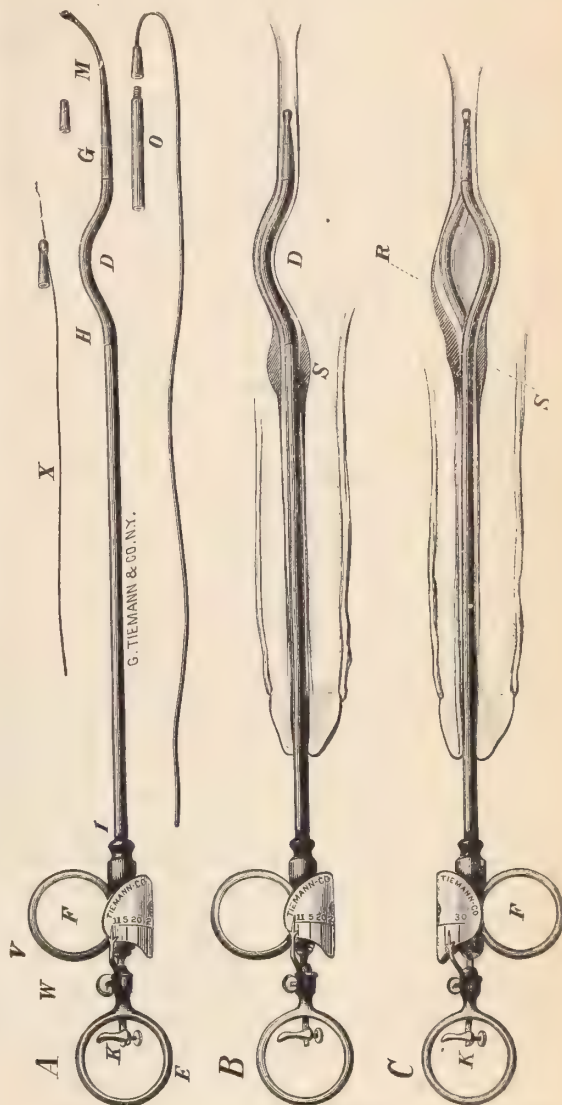
The advantage of a bulbous instrument, wherein the bulb is formed behind the stricture, is readily appreciable to any one. The instrument I offer retains this feature, and the bulb is formed on a plan entirely different from any I have ever seen, and by such mechanism as enables the instrument, when ready for introduction, not to exceed in size a No. 4 steel sound; yet, when the bulb is formed, the measure is that of the largest male urethra. The size of this bulb can be increased or diminished at will; hence the caliber of the urethra, as well as that of the stricture, is easily taken all along its course—a urethrometer combined with the urethrotome.

The instrument is conical and is prepared for the use of the filiform guide, and will safely follow whenever the guide will pass. No preparatory dilatation is needed—a proceeding claimed by way of apology for other larger instruments to be beneficial, and which claim it is difficult to appreciate.

The dilating feature is a *sine qua non* to any urethrotome's permanent favor with the urethral surgeon.

The bulbous enlargement on this instrument is wedge-

shaped, with its apex directed toward the stricture, so that during the periods of incision the wedge continues to insert itself—to dilate the stricture—hence, in the most exact sense of the word, it is a urethrotome which incises while dilating. It is suitable for strictures of both large and small caliber,



because the cut can be made at any stage of the forming of the bulb, and the stricture can be incised on all sides by rotating the instrument.

A careful study of the excellent drawings furnished by Tiemann & Co., who make the instrument, will show the mechanism of the instrument as well as how it is used.

Fig. A shows the instrument with its points and guides.

Fig. B shows its passage along the urethra to the bladder, before the bulb is formed.

Fig. C shows it during withdrawal. The bulb which was formed in the bladder detects the stricture at S, while R is the blade for incising the stricture.

Returning to A, the instrument will be seen to consist of a shaft, I H, a curve, H D G, and a curved point, M. This point M may be unscrewed just in advance of G, and replaced by the straight point O, to which is attached the

soft catgut guide; or the point M may be replaced by the short point, tunneled for the whalebone guide X—after Gouley. The shaft I H is six inches long, cylindrical, with a uniform diameter equaling that of No. 4 English scale, while the curve gradually diminishes in diameter to the size of No. 3. The point O tapers to the filiform guide. Thus we form an instrument which can be safely pressed to the bladder through any stricture whose opening can be passed by the guide.

The shaft I H consists of two cylinders—a solid one, with ring handle E, inclosed by hollow one with ring handle F. Along the curve the two cylinders become solid half-cylinders, with their flat surfaces opposed, thus forming a solid whole cylinder. At G the hollow cylinder of the shaft receives the solid one. The instrument having been passed well into the bladder by means of the ring handle, F, the hollow cylinder of the shaft is rotated, causing a separation of the two half-cylinders of the curve, thus forming (in the bladder) a skeleton bulb of any desirable diameter up to that of the full-sized male urethra. The diameter of the bulb at any stage of its formation can be seen as the arrow-point plays over the meter-plate opposite ring handle, F. It will be seen in Fig. C that as the instrument is withdrawn we approach the stricture at S with the point of a wedge whose base corresponds to the greatest diameter of the bulb. With this wedge we keep the stricture well on the stretch. At R is seen the blade for incising, the handle of which is at K. The blade lies concealed and sheathed between the two half-cylinders of the curve, and can be made to protrude and cut to the depth of one line or less. This incising may be performed with a bulb of any size, and at one razor-like sweep, or by nicking, then dilating, and repeating. The latter is preferable, since by this method we cut only through the depth of the cicatrix when the bulb glides on. That it does incise the healthy (?) urethra both behind and in front of the stricture may be urged as an objection, which, however, is more theoretical than real, since longitudinal incisions are not followed by contraction of the canal.

During the introduction of the ordinary steel sound the point is liable to be arrested by folds of the membrane lining the canal, or by spasm of the "cut-off" muscle; hence the skilled surgeon, to detect a stricture of large caliber, relies on the grasping or "biting" during withdrawal; but to the hand unfamiliar with this "biting" a stricture may escape detection, and the period at which it is most amenable to treatment be allowed to pass. With this instrument and the bulb formed in the bladder, the merest novice in urethral surgery can hardly fail to detect the slightest degree of constriction.

It is not maintained that a cure must necessarily follow simple incision with this urethrotome, but it is maintained that the instrument can be safely passed through any urethra admitting the filiform guide; that it detects and locates the stricture during withdrawal; that it stretches or dilates steadily while the blade nicks fiber after fiber of the stricture through its entire thickness; that, besides being a urethrometer, it can take the place of a series of conical sounds or dilators, and thus be used in the after-treatment.

TWO CASES OF REMOVAL OF UTERINE MYOMA: ONE, SUPRAPUBIC HYSTERECTOMY; THE OTHER, COMPLETE HYSTERECTOMY.

*A New Method of disposing of the Stump.
Microscopical Examination of the Appendages.
Remarks on the Treatment of Uterine Myoma by Electricity.*

By MARY A. DIXON JONES, M. D.,
SURGEON TO THE WOMAN'S HOSPITAL OF BROOKLYN.

(Concluded from page 205.)

ARE the contractile cicatrices from the positive cauterizing and consequent narrowing of the uterine canal to be desired, or are they beneficial? They are produced for the purpose of arresting hæmorrhage; but hæmorrhage may depend upon other causes than the sanguineous exudation or excessive secretion of the interior of the uterus.

And there are yet other dangers; even the great Apostoli speaks of "a fatal error of diagnosis." He says: "I did not recognize the presence of a suppurating ovarian cyst, which caused death from peritonitis." By surgery this unexpected condition could have been managed, and the patient saved. He says of another case: "Death was due to a puncture made too deeply! The consequence was intraperitoneal gangrene! Then "a puncture made too deeply" may cause "intraperitoneal gangrene"? He confesses to having "excited or aggravated in the course of five years ten perimetric phlegmonous inflammations"; and how many perimetric phlegmonous inflammations have been excited by less skillful hands? Says Knowsly Thornton: "We do not fully appreciate the dangers of the method. I know of one case in which rapidly fatal pyæmia followed a few applications in the hands of one experienced in the use of the method." The journals tell us of narrow escapes, and even such careful manipulators as the Keiths record the history of a serious case of cellulitis of which the gravity is not lessened by attributing it to the carelessness of the patient.* Dr. Champreys said, at the meeting of the London Obstetrical Society, June 21, 1883, that "he had heard of wide-spread suppuration and septicæmia, and of death after the employment of this method, and regretted that these cases had not been reported." A physician, in the American Gynæcological Society, says: "I operated in one case, and set up a pretty smart attack of peritonitis by introducing one needle through the abdominal wall"; there was also reported by another physician at the same meeting "an enormous pelvic abscess caused by electrolysis." Another said: "Peritonitis and pelvic abscess are precisely the dangers liable to follow the use of electricity by abdominal puncture."†

Apostoli also speaks of "errors of practice" from the too violent or too intense use of the negative pole in the case of subacute or perimetric inflammation, and says: "I acknowledge having been sometimes unsuccessful, and my failures I shall recount at length in a work now in preparation, and will devote a chapter to needful precautions," remarking that "he has already enlarged upon the dangers

* "Brit. Med. Jour.," March 23, 1888.

† "Am. Gyn. Trans.," 1887.

elsewhere." If all should "write a book," and "recount at length their failures" and "enlarge upon the dangers," I suppose that even the world itself could not contain the books that should be written."

But, with all the stupendous dangers and terrific possibilities, Apostoli says: "It is very easy of application, since it only requires an elementary acquaintance with the principles and practice of electro-therapeutics. It is simple, for it is ordinarily nothing more than a skillful uterine therapeutical soundage." Mundé says: "It requires no prolonged study of the mysteries of electricity, no special knowledge or experience as an electrologist." But, when you think of making punctures in a sick woman's abdomen "for a depth of from three to four inches, according to the size of the tumor," it would seem to require a profound knowledge of something. The "*Lancet*," February 25, 1888, says: "The technical knowledge required consists in the knowledge which those accustomed to pelvic and abdominal tumors possess, and which electricians as electricians do not possess. Are we, then, to expect the appearance of a new hybrid—the 'electro-gynecologist'?" Playfair says: "Cases should be treated by gynecologists, and not left to professional electricians; as well leave ovariectomy to the cutlers who made the instruments used in the operation." Engelman says: "Attention to the minutest details are necessary to the safety of the patient; when the highest intensities are used, we must apply the electrical current with the utmost circumspection."

And there are yet other and unknown dangers, some unrecognized bad condition produced by the current that has a tendency to end in or produce such after ill results. Apostoli tells of "seven who had had the current applied, and afterward put themselves into the hands of six most eminent surgeons, and not one of the seven recovered from the operation." What deadly influence had resulted from the use of the current, or what abnormal change had thereby been produced? Was there an "atrophy" of some vital part, "a dissolvent" or "destructive" process, or was there a "cutting off of the supplementary circulation of some life structures"? Lawson Tait reports in the "*British Medical Journal*," December 17, 1887: "I have recently operated (in addition to one previously alluded to), which has been made worse by electrical treatment." Also in the "*British Medical Journal*" of July 14, 1888, he says that "he had that day operated on a lady who had been treated by electricity for months, not only without benefit, but with absolute detriment." In the "*American Journal of Obstetrics*," March, 1888, a case of, as the writer, Dr. Victoria Scott, calls it, "a mass of interstitial and subperitoneal fibroid tumors." It states that "January 8th an insulated needle was inserted for five minutes with the negative pole in the tumor. January 18th, needle was again inserted for thirteen minutes to the depth of half an inch. February 6th, uterus was swollen around the site of the puncture, and more tender than usual; full feeling in the pelvis; constant bearing down." What injury was done? Was perimetritic phlegmonous inflammation excited, or intraperitoneal gangrene? A short time after this the patient was operated on, in Pennsylvania University Hospital, by one

of our most successful and best-known American gynecological surgeons, and "the patient died thirty-six hours after"; the writer of the article says: "Fallen a victim to the surgeon's knife!" Not so; if the true history was known, it would say: "A victim to the puncture-needle." Apostoli says: "A puncture made too deeply produces intraperitoneal gangrene," and the operator confesses that, "in making the second puncture, the needle was introduced too deeply, and set up some inflammation." But for the previous electrical treatment, this hysterectomy might have been a happy success, as many others have been.*

Dr. L. Byrne, of St. Mary's Hospital, Brooklyn, presented to the New York Obstetrical Society, December 20, 1887, the histories of two cases of "laparo-hysterectomy." One was for sarcoma of the uterus, entirely successful; the other was for uterine fibroid, certainly a much simpler case, but it had been treated by electricity; so it resulted fatally. Is there no lesson or warning in all this? The surgeon says in his report, "being convinced that no advantage but some risk would attend further electrolytic treatment"; and he has since written me that "the patient had been treated for a short period by electrolysis, but without any satisfactory results; probably a result that proved deeply unfortunate. E. Cutter, in his remarkable series of cases published in the "*American Journal of Obstetrics*," February, March, and April, 1887, reports a case:

Woman, forty years of age, pedunculated fibroid ("of which," Sir Spencer Wells says, "it would be idle to suggest electricity, as myotomy would be the work of minutes, and the risk scarcely worth mentioning"). The general health of the patient was good; face and complexion healthy. Electrolysis was thoroughly applied several times, but the tumor was in no way affected, diminished, or softened; the patient's breath became very short, and an excessive serous vaginal discharge prostrated her. Life became a burden. Laparotomy was resorted to, but apparently she had been so injured by the previous electrical treatment that she died in fourteen days. The operation *per se* seemed entirely successful. The record says there was so little shock that the pulse was in no way disturbed, and after the operation the patient desired to see the tumor, and asked for the details of the operation.

* Dr. V. Scott says in the same article: "The time has come when many in the profession are ready to severely criticise the surgeon who dares to remove either the ovaries or the uterus for the relief of this trouble, and it may be in the near future that such an operation will be considered as one of malpractice, and the operator punished accordingly."

Professor T. G. Thomas says: "He who allows death to occur from uterine fibroids without offering the patient the chance of safety possible from gastrotomy, is assuming a responsibility far greater than that which would attend our honest and well-directed efforts to save life."—*Op.*, p. 548.

The London "*Lancet*" of February 25, 1888, says: "It is by no means true that it has been demonstrated beyond doubt that electrolysis, when properly performed, is the most certain, safe, and successful (*sic*) way of dealing with fibroid tumors that we possess."

One case Dr. Scott reports: "Patient, thirty-four years old; a large submucous intra-uterine fibroid and a fibroid tumor, about the size of a walnut, protruding posteriorly from the fundus. . . . Patient desires to be kept under treatment till the menopause; visits the office weekly." Suppose the menopause is delayed till she is sixty, is she to visit the office weekly for thirty years on account of a tumor the size of a walnut?

Another case reported by the same writer :

Woman, forty-eight years of age, with lobulated fibroid tumor of the uterus. General health pretty good, and does not suffer from hemorrhage. Apparently this was a very favorable case for operation, and the operation in itself would have been attended with the most happy results; but electrolysis was used; one electrode was introduced into the uterus *per vaginam*, the other introduced through the abdominal parietes. At the second operation both electrodes were passed through the abdominal parietes. Eleven more operations. Report says: Patient benefited by the treatment, the tumor became smaller, then it enlarged, hardened, and increased in size, and finally had to be removed together with the uterus. The patient lived thirty-six hours.

Dr. Cutter, however, gives the case of a woman forty years old, having a pedunculated fibroid, attended by no hemorrhage; four applications of electricity were made, after which abdominal section was resorted to, for the reason that the tumor might be ovarian; tumor was removed, and patient recovered. "But," says Dr. Cutter, "this case is counted as one in which galvanism had no effect, because laparotomy was resorted to before relief was obtained." If galvanism had had its effect, would the patient have recovered? Dr. James Hunter reports one case in which electrolysis was thoroughly tried on a large uterine fibroid. He says: "I had subsequently to remove the uterus, and the patient recovered. I examined the uterus and found no evidence of any effect on the tissue of the fibroid by the current." In this case also "galvanism had no effect."

The galvanic puncture is more to be dreaded and produces more serious complications than the tapping of ovarian cysts, and seems to have a tendency to end in more disastrous results. I think a question to be asked of all who apply to be relieved of the miseries of a uterine fibroid is, Have you had any electrical treatment, or the galvanopuncture? and if they have had, surgeons would be wise if, in many cases, they would, on this account, refuse to operate.

An operation to relieve a uterus enlarged by a fibroid is certainly a great responsibility. T. A. Emmet says: "To remove the uterus when enormously enlarged by a fibroid growth is unquestionably one of the most formidable operations a surgeon can be called upon to undertake." But every step can be taken with thoughtful, far-seeing intelligence, all probabilities and possibilities weighed, emergencies carefully provided for, and using every care and precaution, knowing that the procedure, if successful, will add years to a life which is now "not worth living," and the increasing miseries of which can not be much longer endured. The two operations here reported were undertaken with the dangers and difficulties full in view, guarding against the dangers as much as possible, and with a thorough design to relieve suffering, save life, and restore to health. "Looking, therefore, at the difficulties and dangers of abdominal surgery and at the avowed impotency of the greater part of medication in cases of fibroma," surgery was elected as the best-treatment for these two cases, as less dangerous than electrolysis, and as giving more perfect results. Greig Smith says: "From the point of view of immediate mortality, it is as justifiable as any other major operation." The

"British Medical Journal" says: "It is an operation not attended with high mortality in experienced hands." M. D. Mann says: In some cases "supravaginal hysterectomy affords nearly as good a chance of success as does ovariectomy in a simple ovarian cyst."

Apostoli speaks of "surgical insecurity and therapeutical insufficiency"; but has not the electrical treatment both "insecurity" and "insufficiency"? In the same series of cases referred to, Dr. Cutter's first direction seems to savor of insecurity. He says "the fibroid must be penetrated deeply in the direction which the operator deems most desirable, and if the pulse becomes accelerated, the respiration hurried, the face pinched, the countenance Hippocratic, and the skin sweaty and cold, it was thought time to stop!"

"The first case, where a regular and determined effort was made to try the effects of electricity upon a uterine fibroid to arrest its growth: The patient, thirty-six years old. Tumor, extending midway between the pubes and umbilicus, weighs four pounds, and entirely free from adhesions."

In the case of such a tumor in so healthy a person, simply removing the uterine appendages, which doubtless were diseased, would have been sufficient, and would have saved the patient all future suffering. Certainly removing the tumor by hysterectomy, with proper care and precautions, would have seemed to be a safe operation; but electrolysis was elected, punctures were made into the tumor through the abdominal walls, and death resulted soon after. Without any electrical treatment the woman would probably have lived many years, at least until worn out with the growth.

Another case: Woman twenty-eight years old, a fibroid of the uterus. First operation: electrodes penetrated the abdominal parietes; a copious discharge of bloody serum followed the introduction of the electrodes, which flow continued for twenty-four hours through the punctures, after the electrodes were withdrawn. Second operation followed by pain in the abdomen, vomiting, hebetude, headache, fever, prostration, etc. Third operation: symptoms more severe, pain greater, and more prostration. The patient was confident that the tumor was lessened in size, but the symptoms of profound exhaustion and extreme weakness recurred soon after, with an asthenic type of typhoid fever which ended her life in about four weeks. The author well says: "When we consider the ordinary result of punctured wounds of the peritonæum it is certainly remarkable that no more patients have perished under the present operation."

Another case: Woman fifty years of age. The tumor had existed for a year. The electrodes were passed through the abdominal walls, and the current continued for five minutes. The next day she had chills, was bloated and swollen in the abdomen, and died six weeks after. Another case: Woman fifty years of age, with a hard abdominal uterine tumor, had two applications of the battery, and thought she had improved and the tumor diminished in size. Third operation: fluid of a sanguinolent character copiously exuded through the punctures; death occurred fourteen weeks after. Woman forty-five years old; eight or ten small, freely moving lobes could be readily felt in the abdomen. Five operations. One electrode was passed through the rectum into the tumor about four inches; the other electrode was passed into the most prominent lobe on the right side of the navel; the current was continued for ten minutes, and was followed by pain and prostration. Second operation: one electrode was introduced through the rectum and the other into

a lobe farther to the right of the navel. "There was some difficulty in penetrating the lobe, as it slipped away from the hold" (showing that it was a pedunculated fibroid with no adhesions and very easy to have managed surgically). The current was continued for ten minutes, and was followed by prostration and distress, quicker pulse, pain in site of the abdominal punctures, slow and irregular breathing, and universal tenderness; pulse, 120 to 130; temperature, 103° to 104° F.; nausea, and finally delirium. Death eleven days after operation. The author again remarks: "When the deep penetration of the abdominal cavity is considered, it appears remarkable that more deaths have not occurred."

Woman forty-one years old; fibro-myoma of the uterus. Both electrodes were six times plunged through the abdominal walls into the tumor to the depth of three or four inches, and the current each time continued for five or ten minutes.

Was there much security in such a procedure? An attack of peritonitis followed, from which she died.

Patient twenty-four years old, health not much disturbed, able to go through her daily duties as domestic: First operation; the electrodes were thrust into the tumor at two points, six inches apart, to the depth of four inches; galvanic current maintained five minutes. Returning to consciousness, she complained of severe pains through the abdomen. Three other operations were repeated in the same manner. Patient said "she was sure the tumor was smaller, because her clothes seemed much looser about her." Two more operations; death a year after. Patient forty-three years old; tumor size of six months' pregnancy; second introduction of the electrodes was followed by profuse hæmorrhage, loss of appetite, and strength. "Death ensued from prostration."* Patient thirty-eight years old; had noticed an enlargement of the abdomen for three or four years; the battery was used; thought she was better, but afterward died.

Of the next case the writer says: "As to the effects of electrolysis, they were not encouraging." He reported some cases as "diminished in size." Dr. T. A. Emmet said "he did not doubt that there had been many successful cases on record, but he had not been so fortunate as to see one." At the meeting of the New York Obstetrical Society, January 18, 1887, was reported the history of "a case of fibroid tumor of the uterus. An insulated platinum sound was introduced into the uterus, connecting it with the positive pole of the battery, while a smooth, round steel needle, properly insulated, was introduced through the posterior cervix into the tumor. A current from eighteen cells of a zinc carbon battery was passed for twenty minutes. Two days after, operation was repeated with thirty cells; she grew gradually weaker and died a month after. At the autopsy the tumor was found to be universally adherent, and a large portion of its interior was found to be disintegrated."

Dr. T. A. Emmet thought that whenever electrolysis was sufficiently effective to cause disintegration of the

tumor, it generally caused the death of the patient. Dr. J. Byrne said: "Several years ago I applied the galvanic current to a large fibroid, fifteen sances being held. I thought I did more harm than good."

As to its "insufficiency" Apostoli says: "There are cases where there is no possibility of satisfactory treatment, owing to an apparently absolute intolerance of high intensities of current."

2. He says: "I have met with the same intolerance in some hysterical subjects in cases of very irritable uterus."

3. "In cases of perimetric and interstitial inflammation."

4. "The class of cystic fibromata."

5. "Tumors with a tendency to malignant degeneration." He says: "I have recorded three such instances; in them intra-uterine galvano-cauterization generally proved useless." And in how many more may it prove useless? He continues: "Something more is demanded, and we must seek in galvano-punctures means more powerful, more efficacious."

6. Baker says: "So long as there is any acuteness present in the inflammatory process, just so long would it be hazardous to attempt any manipulative interference." And Mundé remarks: "It should be used only in chronic conditions." Also, Apostoli emphasizes the special danger whenever there is any trace of perimetric inflammation present." (Are there any cases of fibroid tumor where there is no peri-uterine inflammation present?)

7. Engelmann says: "Tumors with a large portion of muscular structure are less liable to be treated satisfactorily by electricity." (Shall we remove the tumors, and, if the muscular structure does not predominate, use electrolysis with assurance of success?)

The "insufficiency" of electrolysis is especially seen in that it is of no avail in all cases of "multiple fibroids." At a meeting of the New York Obstetrical Society two members of the society said "that multiple fibroids were not suitable for electrolysis," one remarking: "In order to obtain electrolytic action, one electrode must be in the mass." The other said that "he had never treated multiple fibroids by electrolysis, for the method would prove too tedious, owing to the necessity of treating each fibroid by itself, seeing that it was essential to insert one pole in the growth." One of these gentlemen, Dr. John Byrne, of St. Mary's Hospital, Brooklyn, has since written me: "Whatever benefit may possibly follow such treatment in cases of simple fibroid, I would have no confidence in it whatever for multiple fibroids." If this is true, it follows that electrolysis is insufficient in a large majority of cases of fibroid tumors, for probably most fibroid tumors are "multiple fibroids," as in an expression incidentally used by Bantock, in reporting five successful hysterectomies to the British Gynecological Society: "The uterine body being enlarged by a number of small fibroids." The two tumors reported in this paper, though apparently each was one single solid tumor, yet each consisted of a number of separate independent growths; one had ten, the other had twenty-two nodular masses; so, for each of these cases, electrolysis would have had entire "insufficiency." And fur-

* In striking contrast to such cases are the numerous reports of hysterectomy safely performed and the health of patient entirely restored. As in London "Lancet," February: "A tumor measured nine inches transversely; hysterectomy; patient's temperature never above 100.6° F." "Lancet" of March: "Uterus irregularly enlarged as in the sixth month of pregnancy; woman failed from loss of blood; uterus and mass removed; temperature never above 100° F. Patient entirely restored and able to pursue her vocation."

ther, as Apostoli says, "the electrode must enter only two centimetres"; and, as the member of the Obstetrical Society says, "it is essential to insert the pole into the growth"; and as some of the imbedded tumors were many inches away, how was it possible to effect proper electrolytic treatment in these two cases, especially as no human prescience could, in the living subject, have told how many fibroids there were, or how located?

9. Sir Spencer Wells, in his late address before the Brighton and Sussex Medico-surgical Society, published in the "British Medical Journal," May 12, 1888, says: "There are conditions of fibroid tumors in which it would seem to be almost idle to suggest electricity. In a polypoid growth from the mucous surface of the uterus I should not think of any slow or gradual process. Neither does it appear very probable that a subperitoneal outgrowth from the body or fundus of the uterus could be in any degree affected by any current that could be made to reach it. Myotomy would be the work of minutes, and the risk scarcely worth mentioning. Even large solid tumors, the removal of which means the removal of a great part of the uterus, have been successfully removed by myself and by others, and success has increased with experience."

10. The "insufficiency" is seen in the uncertainty and incompleteness of the results. Apostoli says: "When the treatment is fully carried out, the tumor will undergo a manifold reduction in size—a reduction appreciable by the touch, and demonstrable by internal measurement. The further diminution of the tumor will continue for months, varying in amount from one fifth to one half of the original volume." He says again: "Our therapeutic resources carry us as far as the sensible reduction of fibroid tumors, and not to their total absorption." So, after all the treatment, the tumors are still there. As Sir Spencer Wells says, "the women are not radically dispossessed of their tumors." The "British Medical Journal" says: "A solid tumor can not be conjured away. Its atoms are indestructible."

Thus, in the last case I have reported in this article, "if the treatment had been fully carried out," lasting years probably, and "after several months' improvement," and with the best results, the patient would still have a tumor that would weigh six pounds and three quarters or ten pounds and four fifths. Would this be very gratifying, or justify submitting to the dangers and uncertainties of electrolysis? Are there not *incompleteness* in the results and *insufficiency* in the treatment? Will any one pretend to say that with a fibroid tumor weighing six pounds and three quarters, or ten pounds and four fifths, the patient will be cured or be very comfortable? Would any man accept the situation and consent to carry within him for unnumbered years a weight of six or ten pounds and glorify it as "a cure"? If a tumor one half or one fifth of the original size is left, are not the results incomplete and the treatment insufficient? Thomas Keith, in his article on treatment of fibroids by electrolysis, says: "The tumor in every case was reduced in size; in one case the tumor had gone down two thirds."*

rectomy for fibroid which he reports in the same paper there were two tumors which weighed twenty pounds each. Now, if by electrolysis these tumors had been reduced two thirds, like "one of his cases," each patient would still have been left with a tumor that weighed six pounds and two thirds. But we notice that twelve of the cases in which he thought proper to perform hysterectomy, in each the tumor weighed less than six pounds and three quarters, or less than the tumor which would have been left in these "cured women." Two of the tumors which he removed by hysterectomy weighed five pounds each, two weighed four pounds, three weighed three pounds each, one weighed two pounds and a half, and one, one pound.* So twelve of the cases on whom he saw proper to perform hysterectomy were less afflicted than the one he had brilliantly cured. Keith says "all were reduced in size"; it was only "one in whom the tumor had gone down two thirds." So if the two patients who each had a tumor weighing twenty pounds had had the tumors reduced one half or one fifth (Apostoli's best results), each of them would have been left with a tumor weighing ten or sixteen pounds, and with the awful possibility of its increasing!

The *insufficiency* of electrical treatment is shown also in the uncertainty of permanent improvement. Keith said, "should the improvement be permanent," as if he did not know, and then adds: "He has Apostoli's word that if the treatment be carried out long enough, such is generally the case." But Apostoli says: "More time and observation are needed before coming to complete conclusions." The "British Medical Journal" says: "It will be interesting to see if, in Apostoli's cases where large tumors have been reduced in size, the reduction will prove permanent and will not render fresh sittings necessary within three or four years." A case reported in the "American Journal of Obstetrics," p. 266: "Tumor diminished one third. Two years after, tumor returned to its former size." Another case, p. 271: "The electrodes were passed into the tumor six times; tumor sensibly diminished. At last report it had increased in size again." P. 275: "Arrest of growth of tumor continuing about two years, when it increased in size again." P. 376: "Tumor very much lessened in size; one half as large in bulk." Last record: "Tumor larger than ever." P. 380: "Tumor behind the uterus seemed smaller." Last record: "I heard that the troubles had returned and she lives in distress." P. 381: "A movable, multilobar, soft, round tumor, extending from the pubes to above the navel; had repeated galvanic punctures; tumor consolidated." Last record: "Tumor enlarged to twice its usual size." P. 388: "Tumor diminished and softened; subsequent increase of tumor." Another case: "Electrodes passed repeatedly into the tumor three inches deep. In six months death from the recurrence of the bad symptoms. A fibro-myoma extending upward into the abdomen as far as the umbilicus; three times the electrodes were made to penetrate the tumor to

* In Schroeder's Frauenklinik I saw a woman with a uterine fibroid about the size of a cocoa-nut. Schroeder did not think it worth while to perform hysterectomy, yet I am sure Schroeder would say that hysterectomy as an operation has done great good.

* "British Med. Journal," Dec. 10, 1887.

the depth of four inches. Tumor became sensibly diminished in size; soon after, a return of all the previous bad symptoms; her condition grew rapidly worse till she was relieved by death." Of many cases that are now published as triumphs and cures there may be yet a future history, as W. H. Baker, in his late experience of fourteen cases, says of one of them: "There is now some indication of returning growth accompanied with suffering."

And in many other instances can we be as sanguine of cure as the operator would seem to hope? As the "British Medical Journal" says: "Many uncured cases may be reported as cured";* and says elsewhere of the report of a case by one physician: "We can not share the author's confidence about the partial cure of an ovarian sarcoma with perimetritis by electricity; a sarcoma is not always easy to recognize, even when exposed by abdominal section. Electricity may some day be made to cure malignant tumors, but first we must be sure both of the electricity and the tumor." The same journal remarks: "As long as results are questionable, men have a right to oppose and object; nor are they in any way bound to make trial of experiments, the value of which has not been impressed upon their convictions."

The insufficiency is further seen in the great uncertainty of even definite improvement. So often the report is in the language of one, "the tumor was not arrested"; or, as a case reported by A. D. Rockwell: "Patient, thirty-three years old, had repeated applications of electrolysis; electrodes passed through the abdominal, etc. *No impression made on the tumor.*" The same writer says in the "New York Medical Journal," November 12, 1887: "Electrolysis will fail utterly to accomplish what previous experience has given us every reason to expect; at one time it will relieve, at another fail to do so." He says further: "I do not believe a more extended experience will fully confirm all that has, with so much enthusiasm, been maintained by some of Apostoli's followers. It is not a universal means, and we must not make it a panacea." The report from Doléris's clinic is: "No matter what the intensity of the current employed, neither disappearance nor marked diminution in size of the tumor has been noted. When diminution in size seemed to follow, careful measurement showed that it was illusory, there being simply a downward displacement of the tumor." Steavenson, who has charge of the electrical department of St. Bartholomew's Hospital, London, in an address before the Brighton and Sussex Medico-surgical Society, speaking of uterine fibroids, said: "The tumors do not disappear as rapidly or as completely as we have been led to expect, or perhaps as British gynecologists supposed would be the case. I do not think the electrolytic treatment will supplant the necessity for abdominal section or removal of the uterine appendages in such cases as those in which these operations would be appropriate. In the use of electricity we have a means of treating fibroid tumors which is superior to any we have formerly employed short of their entire removal."

Dr. W. H. Baker, of Boston, calls it "the more slow and

inexact method," and at a meeting of the American Gynecological Society said: "The operation of hysterectomy is now too well established as a means of cure for large subperitoneal and interstitial fibroids, and, in the hands of a few, is too successful for me to offer as a substitute electrolysis." Also in the same society Dr. Chadwick, of Boston, remarked, after an address by Apostoli, "that he had followed the author's method of treatment during the past six months, but had not met with satisfactory results." In one instance the size of the tumor was definitely reduced after a few applications; in another, after eighteen applications, there was no appreciable change; in two instances pain and fever were produced, and two cases terminated fatally.* Dr. James B. Hunter said: "I had the pleasure of seeing Dr. Cutter operate and of seeing a number of his cases afterward, together with Dr. Thomas, some years ago, and we failed to see a case which was actually cured, and there were some who suffered considerably from the treatment. I can say that I have never seen any case permanently cured by galvanism."† Dr. John Williams, president of the London Obstetrical Society, justly remarked before that society and as reported in the "British Medical Journal," June 30, 1888: "The literature of the subject was not inconsiderable, but it was very disappointing, for it mainly consisted in the discussion of instruments and the mode of using them. Dr. Apostoli, in particular, has published little else except a series of general assertions and sweeping statements. In his later work on chronic metritis and its treatment by electricity there was much about instruments and many sweeping assertions, but not a single case in support of the latter. The method has thus been put to the test by its founder, and with very unsatisfactory results."

Bantock said "there was much assertion as to what this treatment was going to do, but little evidence of what it had done." Playfair said "it did good for a time."

One medical journal has asked, "if the electrical treatment of fibroids is going to supplant all the methods, or is it an ephemeral fashion practiced in good faith, but soon to be extinguished by the mere fact of bad results?"

What this marvelous unseen element may do, how much this mystic power may be utilized in gynecological electrotherapeutics, we can not say. One writer argues that "this mysterious fluid may do much good, for it has power sufficient to shatter the firmest structures of God or man by an instantaneous flash." But we know that when "it shatters the firmest structures of God or man" it does not in any way annihilate, dissolve, or disintegrate them, or make them disappear. It splits the tree and kills the man, but neither man nor tree are in any way reduced in size; none of their particles are conjured away. The young man who died instantly by touching the end of the electric-light wire was just as large and just as substantial after his unwonted electrolytic treatment as before. The fatal electrolysis had no effect in dissolving, disintegrating, or reducing the size of any organ in his body, but "the dangerous negative pole" killed him effectually. We hope that this powerful agent

* "British Medical Journal," July 14, 1888.

* "Medical News," September 24, 1887.

† "Amer. Gyn. Trans.," 1887, p. 372.

may be intelligently controlled and utilized in therapeutics, for we gladly welcome any means of relieving suffering humanity.

A CASE OF SUPPURATIVE PERICARDITIS TREATED BY ASPIRATION,

*With Some Remarks on a Series of Fifty-six Cases of Pericarditis,
and References to Paracentesis Pericardii.**

By EDWIN T. DOUBLEDAY, M. D.

CONCERNING the signs of pericarditis, the diagnosis, the prognosis, and the treatment, it is unnecessary to speak, as you are well acquainted with them. However, I shall take the liberty of prefacing the history of the case with a few remarks on the history of the disease, and that of a series of fifty-six cases of pericarditis.

Galen was the first to notice the presence of pericardial effusions in animals, and wondered if such a condition ever existed in man. From his time until the seventeenth century but little progress was made in either the diagnosis or treatment of pericarditis; then Vieussens gave the first description of it as a disease. Shortly afterward Riolan, the younger, recommended trephining the sternum and puncture of the pericardial sac for the relief of effusion. He was followed by Senac and Van Swirton. The operation, however, was not thought well of by all, as Morgagni said it should not be done on account of its danger and the difficulty in diagnosis. Romero was the first to do the operation successfully in 1819. In Barcelona, Launec proposed the injection of the sac with some irritating material after puncture. Arau did this with success, but was obliged to repeat the operation several times before a cure was effected.

The discovery by Collin in 1824 of the presence of a friction sound in some cases of pericarditis marked a further advance in the diagnosis of that affection. In the middle of this century there was considerable interest manifested in paracentesis of the pericardium, and Trousseau and Lessegen in 1854, and Vernay in 1856, wrote able articles about it.

I shall now call your attention to some facts gleaned from a series of 56 cases of pericarditis collected from the New York Hospital case-books. My apology for this imposition upon your good nature is that some of these facts have a direct bearing on operation on the pericardium. Of these 56 cases, 39 occurred in males and 17 in females. This is doubtless due to the fact that the lord of creation is more exposed to weather in earning his daily bread, and more addicted to the cup which cheers—and inebriates—than the female portion of the race. Pericarditis is most prevalent between the ages of twenty and thirty years, as 25 cases—over 44 per cent.—of the 56 cases occurred between these limits. One case occurred in a child of eleven months, and one in an old man of seventy-two years. The average duration of the disease, as near as can be ascertained, was thirty days and four fifths in the cases which recovered, and thirty-four days and five sixths in the fatal

cases. Thirty-two cases ended in death, and 24 cases recovered. Effusion, as proved by the pulse, dyspnoea, and physical signs, took place in 28 cases—just 50 per cent. Of these, 16 cases died and 12 recovered. Twenty-five cases were complicated by rheumatism, 11 cases by chronic nephritis, and 5 cases by both rheumatism and nephritis, making 41 cases, or 73 per cent., in which complications existed. In 13 of the rheumatic cases the patient was suffering from an attack of rheumatism at the onset of the pericarditis. A cardiac valvular lesion was present in 18 cases, and in 6 of these the lesion was evidently coincident in time with the pericarditis. Acute pleurisy occurred in 16 cases. Other complications were fatty heart, catarrhal pneumonia, and cirrhosis hepatis. In only 3 cases did the disease seem idiopathic. In 9 cases the fluid in the pericardial sac was purulent. Eight of these died and one recovered. In the case that was cured, the fact of the fluid being purulent was discovered by aspiration. This proves that cases of purulent pericarditis may recover.

Aspiration was performed in four cases. Two cases were much benefited by it, but in the other two no effect was noticed. It is worthy of note that in the case of the child eleven months old, six ounces and a half of pus were found in the pericardial sac on autopsy.

There is no difficulty in the actual performance of either aspiration or drainage of the pericardium; but the reasons why one or the other is not performed more frequently are as follows: First, three fourths of the cases of pericarditis occur as complications, and most of these do not require or are beyond operative help. Secondly, the average medical man is much averse to any interference with the pericardium under any circumstances, and, as a result of this, some patients die from the large amount of serous effusion who could be saved by aspiration, and some die with purulent effusion who might be saved by drainage.

CASE.—T. E., aged twenty-six, single, born in the United States, colored, and a cook by occupation, first came under observation on June 20, 1883. His mother died of heart disease, but there was no other family history bearing on the case. He had never been sick before, so far as he could remember. On May 23d, without a chill, he was suddenly seized with pain in the left side, cough, mucous expectoration, and fever. Pain was felt over a circular area four inches in diameter, with its center one inch to the left of the nipple. The pain was increased by a cough or a deep breath. When first taken sick he had no dyspnoea, but this soon became quite marked on exertion. The pain and cough continued, but he thought the fever had left him when first seen. He had not been a heavy drinker, and specific history was denied.

When first seen his temperature was normal, respiration 32, pulse 114. Respiration was very labored. The pulse was almost imperceptible in the radial arteries. The patient was well nourished. There was slight oedema of both ankles. On physical examination, the voice was distant, and vocal fremitus was absent from a point four inches below the scapular angle to its base on both sides of the chest. An exploratory puncture with a hypodermatic needle failed to find fluid on either side of the chest. Owing to the weak condition of the patient, further examination was postponed, but, as there was evident dullness on the left side anteriorly, a hypodermatic needle was inserted in the fifth intercostal space, two inches to the left of the

* Read before the Hospital Graduates' Club, December 16, 1886.

sternum, and six ounces of purulent fluid were withdrawn. He was ordered a drachm of the infusion of digitalis and five grains of carbonate of ammonia every three hours. The pulse gradually improved, and in a few hours the dyspnoea passed away.

The next day the temperature was normal, the respiration 28, and the pulse 108. He was aspirated as before twice, and 51 ounces of purulent fluid removed. Whisky was added to the medication. He remained in the same condition until June 27th, a period of six days, when an attempt at aspiration was made, but only two drachms of pus were obtained. This was probably due to a faulty aspiration. The dyspnoea began to return, and on the next day was urgent; the pulse was imperceptible in the radial arteries and the extremities were cold. Aspiration was again resorted to, and 51 ounces of purulent fluid were withdrawn. The needle was inserted this time in the fifth intercostal space, three inches and a half outside of the nipple-line. The dyspnoea passed away, and the pulse returned to the extremities after the operation. He had passed about 35 ounces of urine in the twenty-four hours up to this time. The digitalis did not seem to increase the amount of urine excreted. On July 1st he passed only 10 ounces of urine, and the temperature rose to 100° F. The pulse was then normal.

Two days after, he was aspirated in the sixth intercostal space, in line with the nipple, and 46 ounces of pus were withdrawn. The amount of urine excreted increased to 30 ounces. The former medicines were discontinued and he was given Lugol's solution, $\mathfrak{m}\text{iv}$, twice a day.

On physical examination, over a semicircular area with a radius of four inches, with its center at the ensiform cartilage and its lower border an inch and a half above the umbilicus, there was marked dullness on percussion and absence of vocal fremitus, voice and respiration in a line parallel with one drawn from a point two inches below the scapular angle downward. During the next few days the temperature was very irregular, subnormal in the morning and 108° F. in the afternoon. Respiration 32 to 58, pulse 100 to 130. On July 3d an aspirating needle was inserted in the sixth intercostal space, half an inch outside the nipple-line, and 50 ounces of pus were withdrawn. The fluid then ceased to flow, and the needle was pushed in an inch farther, when 33 ounces of clear serum were withdrawn. The serum evidently came from a left hydrothorax. On July 9th 11 ounces of pus were withdrawn, and on July 11th it was recorded that the patient felt quite comfortable. The heart impulse was absent and its sounds could not be heard at any time. I have purposely omitted the somewhat lengthy records of the examinations of the lungs, as they show nothing but occasional attacks of hypostatic congestion and slight hydrothorax. On July 12th 36 ounces of pus were withdrawn. The needle was inserted in the sixth intercostal space, half an inch outside the nipple-line. On July 17th ten ounces and a half of clear serum were withdrawn from the right side of the chest. On July 19th the temperature was only 96° F., and the pulse was imperceptible at the wrist and in the temporal artery. Aspiration was repeated, and 27 ounces of pus were withdrawn, after which the patient rallied somewhat, and the pulse returned to the temporal arteries. From this date the patient gradually sank, and on July 24th died of heart failure. The pulse disappeared from the radial arteries eight hours before death.

At the autopsy, fourteen hours after death, the peritonæum contained a little more than nine ounces of clear serum. The left pleural cavity contained ten ounces of serum and floculi of fibrin. There were old and recent adhesions at the apex of the left lung. The right pleural cavity contained fifty ounces of fibrinous serum, and no adhesions were present. The

right lung was œdematous, and an infarction an inch in diameter and conical in shape was situated in the base of the lower lobe. A large vessel leading to the infarction contained a firmly adherent clot. The parietal pericardium was much thickened and firmly adherent to the chest-wall. The pericardial cavity was much distended and contained nine ounces and a half of pus. The mural pericardium was thickened. The heart was larger than normal, its tissue was fatty, and the endocardium was slightly thickened. The kidneys were congested, but were otherwise normal.

I would call your attention especially: First, to the fact that the patient never had any symptoms either of rheumatism or nephritis. Secondly, that the pericarditis was probably idiopathic. Thirdly, to the almost entire absence of fever while the case was under observation. Fourthly, to the large amount of pus withdrawn at one time, fifty-one ounces. Fifthly, to the fact that over seventeen pints of pus were withdrawn from the pericardium in thirty-four days' time.

As showing the effort that Nature makes to cure these cases, I may cite one mentioned by Wyss, in which there was a pyopericarditis followed by the formation of a fistula lasting for years. The patient finally died of an attack of acute pericarditis.

I believe that in cases of pericarditis where there is a distant and muffled heart-sound, with a weak and rapid pulse and dyspnoea, an exploratory puncture with a hypodermic needle should be performed; that, if pus is present, the pericardium should be thoroughly aspirated; and that if, after two aspirations, the pus reaccumulates, an operation should be performed to establish drainage, and the cavity be washed out, if this be deemed expedient. Of course, in aspirating, the physician must take the risk of converting a serous into a purulent inflammation, as sometimes takes place in cases of pleurisy, even when the best antiseptic precautions are taken.

In cases in which drainage or washing out of the pericardium is employed, I think it would be well to prevent the pressure of the air upon the heart, as in fourteen cases of pneumopericardium, ten died from either sudden heart failure or asphyxia. This might easily be done by the use of a rubber bulb, with a valve opening outward, on the end of the drainage-tube, or by keeping an aspirator attached to the end of the tube and by occasionally turning the ratchet, so as to keep up a slight vacuum.

18 WEST SIXTEENTH STREET.

GANGRENOUS TONSILLITIS.

FATAL HÆMORRHAGE.

By E. B. CRAGIN, M. D.

ALTHOUGH ulceration into the carotid artery, or one of its branches, with fatal hæmorrhage, is spoken of in some of our standard works on the practice of medicine as a possible termination of suppurative tonsillitis, such a result is so infrequent that I take the liberty of reporting a case which occurred under my observation while house physician at the Roosevelt Hospital:

W. J., colored, male, aged forty-five, of American parentage, was admitted to the hospital on August 13, 1887, with the following history: He was able to work until about a month before, when he began to be troubled with weakness of his knees, frontal headache, dyspnoea, and cardiac palpitation, these symptoms continuing until the present time. He had had a slight cough, and had vomited occasionally. For the previous ten days had had sore throat, but the feeling of weakness from the knees down had been his chief complaint. The patient denied the alcoholic habit; he had had gonorrhoea twice previous to 1871; also had had a venereal sore, not followed by secondary symptoms; he had had right hemiplegia in 1876, from which he had recovered, but had "stiffness" of the leg and wrist. He had had measles, scarlatina, varioloid, whooping-cough, and intermittent fever when young. There had been no pulmonary, renal, or cardiac symptoms previous to his present illness. On admission, the patient was fairly well nourished; the lips were a little anæmic; the pupils small, but reacted to light; the tongue was moist; the appetite poor; bowels irregular; micturition frequent; and both feet and the right leg were oedematous. Pulse 88, regular, incompressible. Respiration 15. Temperature 96.8°.

Physical examination of the lungs was negative; the heart apex was in the fifth intercostal space, nipple line; impulse feeble; no murmur. Hepatic dullness began at the fourth space, nipple line; there was tympanic resonance at the sixth space. The patient was rebellious against the use of the tongue depressor, and little was seen in the pharynx.

The urine was pale amber, alkaline, 1.012; large amount of albumin; no sugar.

Ordered aconite and belladonna. Potassium chlorate mouth-wash. Milk diet.

August 18th.—(Edema has subsided; feet are still painful; the "sore throat" has nearly disappeared. Temperature has been subnormal since admission, for the first two days being 97° F. or below. The pulse has not been above 96, most of the time below 90.

August 20th.—On morning rounds, the patient said that he felt very much better. On going to another ward, I was suddenly recalled to the patient, and found blood gushing from his mouth and nose.

I was told that at first he expectorated bloody pus. An unsuccessful attempt was made to reach the source of the hæmorrhage by the finger inserted in the mouth; ergot was administered, but, in less time than it takes to relate it, the patient was pulseless. Infusion of a saline solution into the right radial artery was performed, but without avail, and at 12 M. the patient died.

Autopsy.—The brain was not examined. The lungs were normal. The heart was apparently normal, but several small areas of calcareous deposit were present just above the aortic valves. The spleen was small and firm; the kidneys were slightly enlarged, capsule not adherent, their surface was finely nodular, and the cortex thickened and pale, with its markings rather indistinct. The intestine was normal, but pale in color. The liver was three pounds and a half in weight, and firm in consistency. The stomach was nearly filled with a clot of blood, but its mucous membrane was apparently normal. A large ulcerated area was found in the pharynx, occupying the site of the right tonsil and extending for some distance on the post-pharyngeal wall; to this a large slough was attached by one extremity. The odor was very offensive. In the portion of this ulcerated surface formerly occupied by the right tonsil were visible the open mouths of two small vessels, which were evidently the source of the hæmorrhage.

THE SHADY AND THE SUNNY SIDES OF THE PRACTICE OF MEDICINE.*

By J. M. FARRINGTON, M. D.,

BINGHAMTON, N. Y.

WHEN I was a student of medicine, Professor E. R. Peaslee—than whom no more erudite scholar, cultured Christian gentleman, and thoroughly qualified medical teacher it was ever my privilege to know—in one of his lectures to the graduating class, said in substance as follows: "Gentlemen, you will go from these halls to your respective fields of labor filled with enthusiasm and an earnest desire to relieve suffering humanity; yet, peradventure, the first important case which shall be intrusted to your care, and for which you may have done all that human skill could accomplish, has proved at last to be a fatal one; and although by your assiduous and anxious care and earnest sympathy you may have almost worn out your energies, nearly given your life for that of your patient, and have deserved the *highest* commendation, the *warmest* gratitude of the family and friends, and *liberal* compensation, instead of these—which are to a certain extent compensating returns—you may receive only censure and curses. Don't despair. It will be hard for you to bear, but never mind; sometimes you will get a great deal of credit when you did not deserve it, and the account in the long run will balance up all right."

I have no doubt you may each recall events in your own experience which illustrate the truth of this statement. Reflections upon experiences of this character have led me to present a few thoughts upon a subject that I presumed would come in as an agreeable diversion from the grave consideration of the weightier matters that have occupied this session.

There are many persons found in every walk in life, and representing every form of business, including each of the learned professions, who have had at times a feeling come over them that their merits were not appreciated—that the world failed to recognize their abilities and the efficiency of their labors. Now, while this frequently may be true, yet, as a general rule, the average estimate made by the community in which the individual lives is a *fair* estimate of his character and capabilities.

To all general rules there are, however, exceptions, and the medical profession in this rule *is* the exception. Physicians are usually estimated correctly by their peers, but not always by the laity (to use a church term for the general public who are not medically educated). For these laymen however intelligent and disposed to judge aright, have not the knowledge requisite to make the estimate. They see a man who writes M. D. after his name, who assumes to treat disease and to a superficial observer succeeds. Without qualifications, either natural or acquired, he takes the responsibility and assumes the care of patients afflicted with grave maladies, and, shall I say fortunately for him, the curative powers of Nature and the self-limited character of

* Read before the Third District Branch of the New York State Medical Association, June 17, 1886.

most diseases enables the charlatan to hold up his head, conceal his ignorance, and pass himself off as a qualified practitioner of medicine. If it has been the lot of any of you gentlemen to practice in a community where one of your rivals was a mountebank of the character I have described, and you have been subjected to the mortification of seeing such a character supported and defended by good and respectable citizens, you have known *one* of the clouds that help to make the shadows of professional life.

Again, it pains me to allude to another shadow of *greater* dimensions that most medical practitioners have encountered, especially in their early professional life, when their susceptibilities were tender and they were conscientiously striving to secure professional success—a good reputation and financial support. While it was mortifying to them to see men without culture and preparation selected as attendants in place of physicians of real merit who had carefully qualified themselves to assume professional responsibilities, yet it was a *greater* grief, a more *severe* blow to them to be “wounded in the house of their friends.” Jealousy, envy, and ill-will find root in the hearts of physicians as well as in those of the rest of mankind. Yet how unfortunate it is for the honor of our profession when the public voice gives utterance to expressions like this—ofttimes, alas, *too* true—“See how these doctors (not love, but) *hate* one another!” Probably none of us will live to witness that good time when “the lion and the lamb shall lie down together and a little child shall lead them,” but I trust we shall live to see manifested more brotherly love among medical practitioners who are representatives of a common faith, and who desire to advance the honor of our loved and chosen profession. I confess to you that in the early years of my professional career I suffered deeply from the unprofessional conduct of some of my neighboring medical brethren; yet, nevertheless, I strictly observed the code of ethics (given to us by our fathers), in *spirit* as well as in letter, and the result proved the truth of the old adage “that honesty *is* the best policy” *ultimately*, although the reverse seems often for a time to be true. For these same medical gentlemen, who once sought and conspired to do me harm, afterward became my best friends, and gave me their confidence when adversity or affliction made them want a reliable friend and a professional adviser. To the young men of this Association I would earnestly say, Keep perpendicular, treat your neighboring practitioners as you would like to be treated, encourage professional courtesy and brotherly love, and make a firm resolve that, let others do as they will, “as for me, I will serve the Lord” by obeying the behests of an enlightened conscience.

There is but one other shadow to which I shall allude, and that will complete all I have to say about the *shady* side of the practice of medicine.

There are clouds of sorrow that burst upon our poor humanity from which physicians are not exempt, else they would not be mortal; but I am to speak only of those matters which especially cloud the life of medical men. This shadow is the one alluded to at the outset of my paper.

When we have carefully, thoroughly, and intelligently

given our time, thought, and best energies to the treatment of a case, medical or surgical, and the result has been unfavorable, to receive censure rather than reward is hard for us to bear, but we must be resigned to the result if we have done our whole duty. We can bear to sit still and be calm, and let the hurricane roar about us if we have within the voice of an approving conscience—

“For one self-approving hour whole years outweigh
Of stupid starers and of loud huzzas;
And more true joy Camillus exiled feels
Than Cæsar with a senate at his heels.”

Now we will leave the shades and shadows and turn to the brighter highway, where the sun shines all aglow, the air is bright and balmy, and the flowers bloom in profusion—all tending to cheer and comfort us in our arduous and responsible duties. As day is the opposite of night, so is sunshine the opposite of shadow; and as we have dwelt upon those things that constituted the shady side, we have but to turn to the opposite and we *have* the sunny side.

First, I would speak of appreciation. If we possess merit, it is not only a satisfaction to know it ourselves, but to have it recognized by others. It brings cheer to our pathway in the midst of the broken rest of gloomy nights, in the midst of the study and the anxiety attending the care and treatment of intricate cases, in the sorrowing scenes of suffering and final parting that it is our lot often to witness; to have the afflicted ones turn to us with *confidence* for the services we are able to render, to mitigate human suffering, to prolong life, and often to bring hope and assurance of recovery when all had seemed to them but blank despair; to listen to their expressions of heartfelt gratitude, which often, like the services we render, can not be estimated in the *cold* currency of dollars and cents. Still farther and beyond the appreciation of individuals is the public's judgment of the value of a good physician so well portrayed in Homer:

“The spouse of Helen, dealing darts around,
Had pierced Machaon with a distant wound;
In his right shoulder the broad shaft appear'd,
And trembling Greece for her physician fear'd.

“To Nestor then Idomeneus begun:
‘Glory of Greece, old Neleus’ valiant son!
Ascend thy chariot, haste with speed away,
And great Machaon to the ships convey;
A wise physician skilled our wounds to heal
Is more than armies to the public weal.’

“Old Nestor mounts the seat; beside him rode
The wounded offspring of the healing god;
He lends the lash; the steeds, with sounding feet,
Shake the dry field, and thunder toward the fleet.”

Happy must that physician be who merits and receives such recognition. The late Dr. Austin Flint, whose unexpected death America mourns, was an illustration of the highest type of a physician whose merits were recognized everywhere, and who furnished a fitting example for us all to follow. While true appreciation is by all desired, and brings with it honor and reward, there is, besides this, a feel-

ing of profound pleasure and sweet satisfaction that comes to the heart of the medical man who in the line of duty finds himself able to follow, though ever so humbly, in the footsteps of the Great Physician who while upon earth went about doing good.

Ours is indeed a God-like profession. Let us, my brethren, strive, each in the circle of his influence, to exalt it by individual examples of unselfish devotion to its interests; and, though some of us possess but small talents and a narrowly bounded field of labor, when the individual contributions of each member shall be added to the common fund, we may thus unitedly wield a power, so tersely stated by Homer, that shall be "more than armies to the public weal."

In conclusion, thanking you for the kind attention you have given to the reading of this hastily prepared paper, permit me to give it as my opinion, formed deliberately after the experience of many years of professional life and labor in the varied duties of general practice, that—though there are shadows that fall upon the pathway of the busy physician, some of them so dense and dark as almost to bring discouragement and possibly cause him, in a fit of despondency, to regret the choice he made when he selected his life vocation—after all, over and beyond all these, the seasons of sunshine are far greater; and when the balance-sheet is struck, the *sunny side*, with its cheering rays of genial warmth all aglow with love, gratitude, and just appreciation, will make the shadows fling back their shade and sink into comparative insignificance.

If there be among my hearers one who feels that he has traveled long in the shadows of professional life, I would say to him, "Be of good cheer, my brother; the day-dawn will yet appear, and in its effulgent brightness you will yet bask in the sunshine of professional success." "Perseverance conquers all things." Be true, be courageous, and you will yet wrest victory from apparent defeat.

I have great faith in the influence of this our new State Association to inaugurate a state of things that will lessen the *shadows* and increase the *sunshine* for the true and honorable medical practitioner.

Correspondence.

LETTER FROM PARIS.

The Influence of Germs contained in the Air on the Healing of Wounds.—The Congrès de la tuberculose.—Tuberculosis of Mucous Membranes.—Inspection and Quarantine of Tuberculous Animals.—Perihepatic Tubercular Abscess.—Laryngeal Phthisis.—The Absence of Physicians' Signs in Paris.

PARIS, August 18, 1888.

PROFESSOR LEON LE FORT, Surgeon to the Necker Hospital, and the only prominent French surgeon who attended the Washington Congress, does not believe that the union of wounds by first intention is prevented by exposure to the air. In 1871 Lister first applied to surgery the discoveries of Pasteur—that is, in regard to the ferments—believing that the microbes present in the air acted upon the blood-serum and plastic lymph and

caused suppuration. He then gave the world his celebrated doctrine, and tried to destroy these ferments by means of a spray of carbolic acid in the air, and by the use of dressings containing the same substance on the wounds. It was soon thought that the air contained special forms of microbes which caused all the difficulty in the healing of wounds. Dr. Le Fort, however, has always contended that the air has no influence whatever upon the healing process, and he has never admitted that it can be the means of propagation of purulent infection, either puerperal or surgical, maintaining that this is only and solely caused by direct transportation of the contagion germs from a person who is already ill to those who are well by means of the fingers, instruments, sponges, etc. In order to demonstrate his theory, M. Le Fort undertook to show that even the air in hospitals has no bad effect on open wounds. For several months he has not used dressings after his operations, *allowing all wounds to be in free contact with the air*. Among his cases were three amputations of the leg, one amputation of the thigh, one resection of the elbow, an amputation of nine toes, and other similar operations—in all of which the wounds healed by first intention without the slightest suppuration. In all these cases the surfaces of the wounds were scraped lightly, both during and after the operations, at different periods, and cultures were made of the matter removed. These procedures gave most curious results, which Professor Le Fort intends to communicate to the Academy of Medicine in the autumn, on his return from his summer vacation, and of which we will keep your readers informed. In any case, it would seem from these experiments that Lister's doctrine is not so well founded as many think, and it is at least quite possible that, if we cut our nails close and operate with clean fingers and instruments, we can disregard the character of the surrounding atmosphere. The essential conditions to success are perfect cleanliness on the part of the surgeon, the patient, the sponges, and everything else used. The impurity of the air may be ignored as possessing no power to influence the result.

The first session of the *Congrès de la tuberculose* opened here on the 25th of July, with M. Chauveau as president and with Dr. Villemin and Professor Verneuil as vice-presidents. A number of *présidents d'honneur* were named from various countries, those from the United States being Dr. A. Jacobi and Dr. Page. Professor Chauveau, in his opening address, spoke very highly of M. Villemin and of the fact that he first demonstrated the inoculability of tuberculosis in animals, while he gave every credit to Koch for having discovered the bacillus. He finished by hoping that the congress would go on with the good work until it could check the ravages of the terrible plague of phthisis, and increase the duration of life and happiness on earth. Dr. L. N. Petit, the secretary-general, read the long list of societies which had given their names in support of the object of the congress. The only American one was the Academy of Medicine of New York. The first important communication made to the congress was that of Professor Cornil, on "Tuberculosis of the Mucous Membranes." He said that the penetration of the bacillus by simple contact with the mucous membranes was a most important point, and he found that it was not at all necessary that an excoriation, fissure, or any lesion should be present in order to permit the bacillus to enter the system, simple contact being sufficient, as had been shown by experiments made by Chauveau, Villemin, Gerlach, Collinger and others. M. Cornil had repeated experiments made by these observers and had made some guinea-pigs swallow a few drops of a cultivation of the tubercular bacillus. Following its effects on the intestine, it was noticed after fifteen days that there were tubercles, visible to the naked eye, on the mucous membrane. In studying the uterus, cases were seen in the human subject in

which the os uteri alone was involved, in women who had no pulmonary or peritoneal lesions. This would lead to the conclusion that contagion is really possible through the sexual function, from the male to the female. To establish this, Dr. Cornil introduced into the vagina of a number of guinea-pigs several drops of a cultivation of Koch's bacillus. This was done by means of a smooth glass tube, so that no erosion of the mucous membrane was produced. After periods varying from six to thirty-two days the animals were killed and preparations were made of the vaginal and uterine mucous membranes. Those of the first period showed catarrhal inflammation of the neck of the uterus, with great collections of lymphatic cells; later on, about the fifteenth day, this catarrhal inflammation was increased and the formation of small tubercular follicles could be seen to have occurred; and thirty-two days after the injection the tubercles were quite plainly visible. These experiments prove that *the infection of the uterus by the vagina is possible if the bacillus is introduced into it.*

Professor Nocard spoke on the dangers to which we are exposed in making use of the meat and milk of tuberculous animals and of the means of preventing it. As to milk, it would seem that it is after the lesions have involved the glandular tissue that it becomes unwholesome, but, as it is almost impossible to tell exactly when the cow's udder is infected until toward the last stage of the infection, M. Nocard thought that the greater part of the milk sold in large cities must be more or less dangerous; and, as boiling it was the most simple and effective means of prevention, he would say: "Mothers, never give any milk to your children without having boiled it first." He makes an exception in favor of goats' milk, as these animals do not seem to have tuberculosis, while cows are quite subject to it. From Toussaint's studies, this disease is *totius substantiæ*—that is to say, that it invades every portion of the organism; the tissues and fluids alike possess the germ of the affection. The only remedy, then, is for the officers of the law to seize the entire animal as well as its milk and to exclude both from the market when the existence of tubercular disease in the animal is suspected. Even the skins of such animals should not be allowed to be used until they are thoroughly disinfected, and certainly milk coming from tuberculous cows ought not to enter the circulation. In France the animals pass under a strict inspection by veterinary surgeons, and strict laws are being enforced to keep diseased animals out of the markets. It is not, however, believed that the meat of such cattle is very dangerous to health, as experiments made by feeding cats on such meat do not prove that tuberculosis results therefrom. In any case, however, it would be well to have tuberculosis assumed as a reason for prohibiting the use of the meat of such animals until means are found of making it non-injurious, and all dairies should be placed under the watchful care of experts who can judge of the health of the cows which furnish the milk. It will only be by a system of quarantine and elimination by inspection, to be required by law, that the danger to man caused by the existence of tuberculosis in animals can be removed.

The proportion of tubercular animals is not large—only about 6 per cent.—so that commercial interests would not suffer if they were seized by the inspectors. It is somewhat curious to note that, in regard to the phthisis of fowls, M. Moulé states that tuberculous liver is quite common in all the *Gallinæ*, and that persons mistaking such livers for fatty ones eat them with pleasure, while in reality they are full of the bacilli—quite a warning to the eaters of *pâté de foie gras*.

Professor Lannelongue called the attention of the congress to *perihepatic tubercular abscesses*, and instanced several cases in order to prove that phthisis of the liver exists, and has its origin on the surface of the organ. It is quite distinct from tubercular

granulation of the substance of the liver. The question of the use of a diet of raw meat and blood in the treatment of tubercular patients was discussed by several observers. Dr. H. De Villeneuve thought that, like any exclusive alimentation, it was bad; the indication was rather to increase appetite by sufficient doses of strychnine and arsenic, and to satisfy it by varied food. If any, however, wish to use raw meat and blood, advise them to use that of the goat or sheep rather than that of other animals. Clarification of wine, etc., should be made with the same blood. Many other interesting papers were presented by M. Hanot, M. Landouzy, Professor Verneuil, and others, but we search in vain for some practical point that would help the general practitioner to cure his patients who already have tubercular disease. It is perhaps too much to ask of any congress to find a certain cure for any disease; so that, although from a therapeutical point of view we find the congress lacking, we can not but admire its foundation, and we hope that, under the lead of Professor Verneuil, who is called the "greatest physician of all our surgeons," its deliberations will yet lead to some practical result. Very many facts in regard to the theory and pathology of phthisis, and of its prophylaxis, etc., were brought forward, and from a scientific point of view these were certainly well discussed, so that if the influence of the congress is strong enough to cause tuberculosis to be included among the contagious diseases in the sanitary regulations, and inspection of animals be thereby enforced, it will already have done an important work, and we can look forward to its next session, to be held after two years' time, under the presidency of M. Villemin, in hopes that the therapeutics of phthisis will then be improved. While upon this subject, let us mention the appearance of an important work called "*Phthisie laryngée*," by Dr. A. Gouguenheim and M. Tissier, one of his internes. This is a large volume in octavo, with designs and three chromolithographs showing the parts involved. Dr. Gouguenheim is physician to the Lariboisière Hospital, where he has the largest laryngological clinic in Paris. Laryngeal phthisis is one of the most difficult of studies, as its forms so resemble those of syphilis and other diseases that simulate tuberculosis that a complete monograph on the subject is interesting.

One of the rather curious facts in regard to medical customs in France is the difficulty a stranger has of finding a physician's house, notwithstanding the fact that Paris has as large a proportion of physicians as any other city—not excepting some American ones. The greater number display no sign, and when you know that in Paris one house is as like another as two peas, it is easy to imagine the trouble of finding the right house when on the search for a doctor. Not only is there no "shingle" on the front door, but there is not even one on the door leading to the office—not even a card to show the stranger who lives in the *appartement*. We were told the other day of an American's search for a celebrated French specialist's office. He had the world-wide known name well enough, but could not pronounce it as they do here. However, by writing it, he found the boulevard, and, fortunately, he had the right number, but here again his troubles began, as he did not understand the polite "concierge's" instructions as to which floor the doctor occupied. Nothing daunted, our Yankee friend mounted the stairs, hoping to find at least the family name on a little silver plate on the door, but, alas! after mounting seven flights he could see no sign. Determined not to be beaten, however, he wrote the name on a paper, and, commencing at the first floor again, he conscientiously rang at all the doors until he found the right one. Among all the thousands of physicians who practice in Paris, *not one*—except the English and Americans who practice here—has his name on his own door, nor on the street door. Among the cheaper class of physicians will be found a small

sign saying "*Docteur en médecine de 1 à 3 heures*," but no name is given; and as to the better class, not the slightest indication is given that they live in a house. It is a curious Parisian custom.

LETTER FROM LONDON.

The Annual Meeting of the British Medical Association.—The General Addresses.—Dr. Macewen's Address on Cerebral Surgery.—Dr. Tidy's Lectures to Barristers on Forensic Medicine.

LONDON, August 14, 1888.

THE annual meeting of the British Medical Association, which was held in Glasgow last week, must be considered to have been a decidedly successful one in all respects. There was a large attendance of members, a considerable number of papers were presented, on several of which there were good debates, the general addresses were of exceptional interest, the weather was fine, and there was plenty to be seen both in the town of Glasgow and the surrounding country.

Professor Gairdner was president of the meeting, and in his opening address traced the career of the physician as a student of nature from the earliest times down to our own day. The addresses in medicine and surgery were delivered respectively by Dr. Clifford Allbutt and Sir George Macleod. Dr. Allbutt devoted the time allotted to him to what he aptly called the *novum organum* of medicine—i. e., the classification of disease, dealing with it under the heads of heredity, the historical method, the geographical method, and the experimental method. I shall content myself with saying that he delivered a most thoughtful essay on an exceedingly difficult subject.

Sir George Macleod selected a much easier theme, and passed in review the progress made in the art of surgery during the past half century. The two epoch-making discoveries of this period—viz., anæsthetics and antiseptics—first occupied his attention, and he was able to refer with natural pride to the fact that it was in Glasgow that the first principles of the aseptic treatment of wounds were formulated. Passing, then, to practical surgery, he referred to the bloodless character of operations at the present time as a great contrast to those of bygone days, and to the important position now occupied by operations for excision of joints. Lithotomy and lithotripsy, ovariectomy, cerebral surgery, the treatment of strangulated hernia, and the surgical treatment of pulmonary and renal affections also came in for due attention, as well as the surgical uses of electricity, and Apostoli's method of treating uterine fibroids.

It is the custom at the meetings, in addition to these three addresses, to have one other general address, the subject being determined by the choice of the person appointed to deliver it. This year Dr. Macewen was invited to give an account of his recent investigations in surgery. Dr. Macewen has been working at cerebral surgery for over twelve years, and he had therefore an amount of material at his disposal which I suppose no other operator could equal from his own resources alone. The first case which came under his observation, in which an operation seemed to be called for, occurred in 1876, when a man presented the signs of a cerebral abscess in the situation of Broca's convolution. The friends refused to allow an operation, but after the death of the patient Dr. Macewen was permitted to do the operation he had advised, when the accuracy of his diagnosis, both as to the abscess and its situation, was proved. Three years later he performed his first operation on a boy who had motor symptoms from an extravasation of blood in the neighborhood of the fissure of Rolando, the patient recovering without a bad symptom. Since that date he has performed many operations, but none, perhaps, in which a more

brilliant diagnosis was made than in the following instance: A man who had had an injury to his head about a year previously suffered from deep melancholy, homicidal impulses, and pain in the head. Before the accident he had been quite healthy. There were no motor phenomena, but on minute inquiry it was discovered that immediately after the accident and for about two weeks he suffered from psychical blindness. Physically he could see, but what he saw conveyed no impression to his mind. An object presented itself before him which he could not make out, but when this object emitted the sounds of the human voice he at once recognized it to be one of his fellow-workmen. By eyesight he could not tell how many fingers he held up when he placed his own hand before his face, though by the exercise of his volition in the act, and by other sensations, he was cognizant of the number. In the same way he could not read, for he saw the letters, but they conveyed no meaning to his mind. These phenomena, however, gave the key to the hidden lesion in his brain. On operation the angular gyrus was exposed, and it was found that a portion of the internal table of the skull had been detached from the outer, and had exercised pressure on the posterior portion of the supra-marginal convolution, while a corner of it had penetrated and lay imbedded in the anterior portion of the angular gyrus. The bone was removed from the brain and reimplanted in proper position, after which he became greatly relieved in his mental state, though still excitable. He has made no further allusion to his homicidal tendencies, and is now at work.

Dr. Meymott Tidy has been delivering a course of lectures on forensic medicine to barristers, and the course has been so successful that it is intended to make its repetition an annual event. Our barristers are not nearly so well informed in matters pertaining to medicine as they might be, and it will certainly be to the advantage of the public that those who intend to practice at the common-law bar should have some instruction in such matters. I hope that Dr. Tidy will be stimulated to continue the publication of the work on legal medicine which he began some years ago, but of which only two out of six volumes have as yet seen the light.

Rickets and Syphilis.—According to the "*Lancet*," "Comby does not agree with Parrot's proposition that rickets only arises as the ultimate manifestation of syphilis. The 'geographical' tongue, the scarred buttocks, eroded teeth, and natiform skull are signs of an extinguished syphilis, according to Parrot and others. Hereditary syphilis attested by these marks would cause osteophytes, gelatiniform atrophy, and spongy tissue, which suggest rickets. Comby contrasts rickets with syphilis. In the former, rarefaction of tissue occurs; in the latter, condensation and softening. Scars and dental lesions are common in syphilis, rare in rickets; corneal lesions are generally scrofulous; lingual desquamation is not peculiar to syphilis. If infants who have been impregnated with syphilis are provided in due course with suitable food, they will not become rickety. In the ætiology of rachitis, syphilis holds the same position as measles, variola, scarlatina, typhoid fever, and broncho-pneumonia."

Pseudo-Tabes.—"The imagination is not more fertile" (says the "*Lancet*") "than is nature itself in the production of infinite variety in disease. Contemplate a few steps in the recent progress of neurology and this statement will not appear exaggerated. Remember how disseminated sclerosis was distinguished from paralysis agitans; how we were shown that tabes dorsalis could exist without disease of any part of the cord; how there are cases of pseudo-sclerosis described by Westphal in which no sclerosis could be found after death; and now we have an equally good authority (Pitres) describing in the '*Archives de Neurologie*' a case in which progressive locomotor ataxy was believed to exist for ten years, yet at the necropsy and microscopical examination neither sclerosis of the posterior columns of the cord nor disease of the spinal roots or spinal nerves could be detected."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 1, 1888.

IS SUPPURATION IN WOUNDS CAUSED BY GERMS PRESENT IN THE AIR?

THE experiments by Professor Le Fort, mentioned by our correspondent, whose letter will be found in another column, seem to furnish strong evidence that the aseptic healing of wounds is to be gained by the exercise of care and cleanliness at the time of operation, rather than by the elaborate use of antiseptics, either during the operation or in the subsequent dressings of the wound. It is a well-known fact that wounds which have been treated after a manner which violates every rule of antiseptic surgery will often heal by first intention without suppuration, while precisely similar injuries, treated after the most approved antiseptic methods and with the exercise of the most punctilious care to prevent the most wily germ that ever roamed the air from adopting the wound as a locality favorable for the planting of a vineyard and fig-orchard, as well as a proper place in which to obey the Divine command to increase and multiply, will frequently present every variation of septic action, from simple non-union of the wound to general pyæmic infection. In by far the greater number of cases the wound treated after the primitive method, without antiseptic measures, but which heals without suppuration, is the property of a patient who is treated in the pure air of the country or in that of his own home, while the carefully protected lesion, which fails to withstand the subtle septic influence, is usually a thorn in the flesh of some hospital patient, and is surrounded by an atmosphere supercharged with the germs of various diseases.

Exceptions occur in both classes, as is to be expected; and this inconsistency in the behavior of wounds has caused a division of surgeons into three parties—one holding the opinion that neglect of ultra-antiseptic measures evinces a reckless and criminal disregard of human life, another scoffing at the theory and practice of antiseptic surgery and maintaining that bad results are due rather to constitutional causes than to the action of germs, and a third party following the tenets of an agnostic creed, neither neglecting nor strictly conforming to the rules laid down by ritualistic antiseptic surgeons. Hospital statistics are overwhelmingly in support of the first faction, whether this be a result of the use of antiseptics or of simple cleanliness and improved methods of operation. It is also but just to state that the second party is largely composed of those worthy practitioners who live in the memory of "the good old times when etc.," and numbers among its forces but few of the progressive surgeons of to-day. Each party can produce powerful clinical evidence in support of its own particular dogma, and each can point to unfortunate results following the treatment of its rival. In the matter of argument, or the manipulation of statistics, the

disciples of strict antiseptis hold the balance of power, for they can point with pride to their good results, and explain their failures by the assumption that some minute detail of the system must have been neglected, thereby vitiating the influence of all the other precautions. Every bad result in the practice of their adversaries is regarded as a triumphal vindication of the antiseptic theory, while every success is regarded as a simple coincidence due to inexplicable causes. Thus they are possessed of an adjustable and general-utility argument, which savors much of the "heads I win, tails you lose" variety of logic, which is highly exasperating to their opponents. Moreover, their statistics are largely taken from hospital records, while those of their opponents are mainly drawn from cases in private practice. The main argument of the latter disputants is based on the statement that cleanliness, and not the use of chemical antiseptics, is the true principle to be followed in surgery, and they accuse the surgeons of the former school of substituting elaborate antiseptic methods of dressing, etc., for operative skill and sound judgment. In other words, that, misled by the brilliant results of the antiseptic method, they operate in unsuitable cases, and with too little attention to technique and operative dexterity.

It is certainly true that the most approved antiseptic methods are much more simple at the present time than in former years, and that the tendency among surgeons is to do away with the complicated dressing, and to depend more on disinfection at the time of operation, than upon the raising up of antiseptic ramparts around the wound during its after-treatment, although this is still vigorously advocated and practiced. More and more stress is laid on the necessity of absolute cleanliness of hands, sponges, instruments, etc. Lawson Tait has established the fact that dexterity, scrupulous cleanliness, rapidity of operation, and the exclusion of all unnecessary fingers from the peritoneal cavity have more to do with success in laparotomy than the most elaborated antiseptic measures when not accompanied by operative experience and skill; and not only this, but also that the free use of antiseptics in abdominal surgery has a tendency to prevent rather than to promote recovery.

It is to be hoped that Professor Le Fort will be enabled to cast some light on this obscure subject, which is of such paramount importance to the surgeon and to the community at large. If he be able to show by his experiments that suppuration in wounds and general septic infection is always due to direct inoculation and not to contact with contaminated air, he will have accomplished a work second only to that of Lister, who originated the modern principle of good surgery, even though his specific treatment be proved unnecessary or faulty.

PLAY AS A MEANS OF DEVELOPMENT.

POPULAR ideas concerning play are extremely vague, even among those who look upon it as a pleasant kind of trifling. Although a real activity, it differs from work in two essentials—the motive that prompts it and the object to be attained by it. Will inspires the worker, and a given result is the object of his efforts. Play is an instinct with the child, and has develop-

ment for its object. This instinct is an inherent impelling force that causes all the muscles of the body and various faculties of the mind to be exercised in sufficient measure, but never in excess. It gives a large share of education and training, and prepares the young for future work. Nature never leaves what is necessary for continued existence to be supplied by the unaided wisdom of man. The young animal is an incomplete animal, in process of being made. Its future power of supporting an independent existence depends upon the manner in which that process is carried out. After the immediate support of life, the great aim Nature has in view is to complete the animal mechanism, to bring it to its required size, and to give to every part its full measure of strength. Growth and development go on side by side; although correlative, they are not the same. To compare their united efforts to the building of a house, growth may be likened to the placing of the stones or other material in position, and development to the cementing of them together, thus giving strength and durability to the structure. A suitable supply of building material is essential for the process of growth to be carried on, and that is all it requires. For development, exercise in response to proper stimuli is imperative. Without this functional activity there can be no development. Air, light, food, raiment, and shelter furnish the proper conditions for growth. Something more is required for development or growth in functional activity, as it may be called; and that something is play. A child may grow rapidly while confined to bed, waste being reduced to the minimum and nearly all nourishment being applied to the building up of the body. But strength by no means keeps pace with this growth; development has been suspended for a time. It is a well-known fact that continued or frequent attacks of sickness rendering confinement of this kind necessary have an appreciable effect upon the ultimate strength of the man. Other things being equal, the power and usefulness of the man are in proportion to his capacity and opportunity for spontaneous play during childhood. Not long since a party of newsboys, boot-blacks, and other street urchins were given a day of fresh air upon a model farm by a number of well-meaning business men, who piloted the motley crew to their destination. The boys hung around like limp dish-cloths, in spite of their steel-trap smartness, incapable of joining in any out-door sport. Those who had them in charge endeavored to initiate them into the mysteries of foot-ball, climbing trees, scaling fences, pitching hay, etc. But all to no purpose; they had no following, only idle spectators, a line of lads incapable of using more than certain sets of muscles. The outlook for these boys' future is certainly the reverse of encouraging. The absence of spontaneous, all-round play in early childhood debars them from future advancement to any great extent. Their only hope lies in the possibility of some happy eleventh hour, that kind provision of Nature when, a man being needed, the occasion may mold out of one of these a laborer to dig in the vineyard.

What is play? It is not work, assuredly. "The lambs play always, they know no better," says the wise little maid in the poem, as if lambs, whether human or brute, had any other

business in life! Play may be defined as all voluntary exercise prompted by natural inclination and producing pleasure. It is a preparation for work, and ceases as an instinct when maturity is reached and the animal has to work for its living. The great variety and apparent aimlessness of motion in play is explained by the requirements of the muscles and the faculties and the necessities of the future. Any small object in motion is a temptation to a kitten. The frisky animal crouches, springs, and seizes the unoffending ball or spool as if it were indeed a sweet morsel to be devoured. Not present circumstances but future necessities regulate its movements. So, too, with the gambols of the pup, of the duckling, and probably of young animals in the wild state. Seemingly bent on amusement only, they are diligently practicing all the arts upon which they must subsequently depend for subsistence.

Play is imitative. The cat teaches her young how to play, converting paw, tail, or head into an improvised mouse or bird. In the child, play is progressive as well as imitative; and this element of progress distinguishes man from the lower animals, our little ones from their humbler cousins. The presence of a mentality capable of thinking about its own thoughts marks the gulf fixed between the sports of the human young and that of other vertebrates. Mind is not a homogeneous entity, but a collection of organs or faculties. The combined action of these faculties produces our thinking or intellectual powers. Mind is developed, not as a whole, but in faculties (so called), one succeeding the other, and each disclosing its own individual quality and growing according to its opportunities for exercise. It is not alone mind as a whole that needs exercise, but every separate organ of mind. The infinitely varied and constantly changing play of childhood accomplishes this end. Imagination and the constructive and inventive faculties unfold under the influence of this impelling and regulating force. The will—the power of controlling and regulating mental action—is weak in the child; consequently, the automatic activity of the faculties is but little interfered with by voluntary effort, the attention being carried away by whatever attracts it most; and thus a fairly equal development is secured. Children of special gifts are early attracted to certain forms of play, and will leave companions not interested in the same varieties to carry out their inclinations by themselves if necessary. Of Mr. Dalton's one hundred and eighty men of science, nearly all showed a marked preference at a very early age for pursuits approaching in general characteristics those in which they afterward attained distinction. "The child is father to the man." If we were only wise enough to see it always, and prevent the genius that is born from dying in its infancy for want of sympathy and guidance! Newton, Swift, Johnson, Scott, Byron, and many others were dull at routine amusements and routine tasks, but glowing and alive when engaged in their own peculiar chosen pursuits, with the result shown in their after-career. The "play" of Thomas Edward, the Banffshire naturalist, differed materially from that of his neighbors. In spite of chidings and beatings, the poor child of six (who worked from 8 P. M. till 6 A. M. in a tobacco factory)

would roam the woods for the greater part of the day in search of "sinfu" beasts," as his lizards, newts, snakes, and other bright-eyed pets were called. And that dull lad, Walter Scott, rehearsed so well and dramatically the tales learned from the bordermen that his presence among his companions in the class-room interfered seriously with their enjoyment of grammatical exceptions and the rule of three.

"Deep meaning often lies in childish play," says the good Schiller. Deep meaning *always* lies in childish play, says the modern investigator along the lines of physical psychology. The boast of the Jesuits—that they care not who has the child afterward, if they may direct him till the age of seven—means simply that the guidance and inspiration of play-days have the greatest possible influence for all time upon the body, the mind, and the will. Companions educate more than the schools, and the home more than companions. Shall we play with our children, or leave their voluntary activities to blind chance? Shall the dumb mothers exceed us in wisdom? Let us dare to be children again with children, for their sake and our own. The burdens of life could not be borne except for an underlying gayety of heart that we share to a greater or less extent with them. Always is the contemplation of human nature unfolding an inexhaustible mine of interesting discovery. Originality alone is interesting, and where is it to be found as in the child, with his shining morning face, his thousand and one quaint capers, and his endearing little ways? It would be an old and dreary world if there were no children in it to bring hope and forward-looking thoughts. Those who miss the fresh, cheering companionship of a newer generation lead a life from which the best is left out. To voluntarily relinquish to others or to chance the supervision of play-days—and school-days and experiment-days as well—means great risks for the future and fewer joys for the present. Self-interest, humanity, and science all point in the same direction. We must play with our children, and cease to leave a matter so important to chance.

MINOR PARAGRAPHS.

"BETTER THAN NOTHING."

THE following extract from the "Lancet" is worthy of special notice: "The public is sorely in need of 'a new set of images,' according to Lord Beaconsfield. Conventional language, however, dies hard; and the satire of 'Tancred,' though of forty years' standing, has not succeeded in laughing down 'last not least'; 'crowned with success'; 'leave no stone unturned,' and replacing them by fresh equivalents. 'Wise saws,' too, would be all the better for revision, if not for actual readjustment; nay, even more so than the usages of speech; for they assume a certain wisdom, and even authority, inasmuch that we are often duped and dominated by them. Mr. Goschen, on a memorable occasion, has shown how many abuses, how much *laissez-faire* legislation, owe their longevity or actual existence to the phrase 'after all,' the germ of a great deal of the practical torpor that intrenches itself behind 'let well alone.' For medical men there is another phraseological offender, almost as mischievous in the sphere of health as its congener, 'after all,' is in that of politics. At this season, when a temporary break in routine life hurries off so many citi-

zens to the foreign health-resorts or watering-places, there is no phrase so frequent on the lips of the holiday-taker as 'better than nothing.' The overwrought curate or fagged lawyer runs abroad to this or that fashionable 'kur,' to take so many baths or daily beverages or massages as the case may be, and if it is suggested that the course is insufficient, or the time spent over it too short, the answer is very apt to be 'Yes; but it is better than nothing.' Now, there is a very grave risk in such proceedings—a risk to which the non-medical public seem but little alive. Like every other therapeutic agent, a mineral water, whether as a beverage or as a bath, must be taken, when indicated, in certain proportions, under certain conditions of time and circumstance, and subject to certain modifications during the course. Repeatedly the home physician has to treat cases of chronic disease in which all the symptoms have been seriously complicated through the disturbance wrought on the patient by foreign mineral waters used just often enough, or just long enough, to worry the system—to set in operation a series of blood changes which, before they result in the expected good, must complete a certain well-understood cycle. A powerful alternative, in fact, has been commenced by the patient, but it has not been followed up to its proper issue—it has been arrested in its course, so as to be operative only to complicate, not to cure. This is peculiarly the case with those waters that contain arsenic in varying proportions, the partakers of which, having received benefit from them once, resort to them again often on their own account, and think a few days of their use, if not all that could be wished, at least 'better than nothing.' The same may be said of the massage. A sufferer from incipient atheromatous degeneration goes abroad to put himself under some well-known *masseur*. He has twelve days at his disposal, and he employs them in a dozen operations at the hands of the powerful manipulator. He does not realize that the accelerated metabolism—the histolytic waste—caused by the *masseur* is in excess of his power to repair it, and, deceived by a certain immediate sensation of lightness or nimbleness, he perseveres to the twelfth day, and returns home to find himself in the condition of an athlete who has been overtrained, with perhaps permanent damage done to the walls of the heart. 'Better than nothing' in his case has been 'worse than none at all.' He had much better have kept out of the *masseur's* hands than have undergone a daily recurring series of muscular exhaustions more depressing than a three hours' brisk walk each day would have been. As with the mineral water so with the massage; a graduated interval has to intervene between each dose or each operation. Time must be given to the system to recover from the shock of the new series of conditions imposed on it. But the duration of this interval, as, indeed, the resort to the 'kur' in the first instance, can be regulated with safety by the physician alone, whose painful experience it often is to fight a losing battle in attempting to retrieve the *dyscrasia* or the systemic exhaustion induced by the patients acting on the fallacious half-truth involved in 'better than nothing.'

THE CAUSE OF CANCEROUS INFECTIVITY.

DR. JAMES BRAITHWAITE, in the "Lancet," thus explains the phenomenon of the spread of cancerous disease: Vitality is only comparative, and the different cells which enter into the construction of the various parts of the organism are of varying degrees of vitality. A malignant growth springing from the epithelium may originate in several ways, but penetration of the basement membrane and lodgment of cells beneath this, no capsule being formed, are essential to its further development in contiguous tissues. These cells, so placed, are possessed of more vitality than those of which these tissues are composed.

Hence their growth is rapid and their power to invade more remote structures is increased. A few of these hardy, vigorous cells pass through a lymphatic vessel, and effect an entrance into a lymphatic gland. They are then located in the midst of a structure which is designed to deal with effete matter of little or no vitality. As a consequence, their vitality overpowering that of the gland cells, the newly arrived cells flourish at the expense of the normal elements of which the gland is composed. If this view, therefore, be correct, the whole question of infectivity hinges upon the following points: 1. The certain fact that life is comparative in amount, and that a varying quantity exists in different tissues and cells of the same individual. 2. The probability that, just as decreased nourishment causes decreased vitality, so increased nourishment will cause increased vitality or life fluid in cells. 3. The probability that, as the cells of various tissues require different and varying forms of nourishment, so an increase in the food of one especial ingredient may cause an increase in the life fluid of one especial set of cells. 4. The probability that, when cells of different degrees of life compete for space, those of a higher grade will displace those of a lower grade, other circumstances being equal. 5. In the case of epithelium cells thus competing, their inherent peculiarities assist this competition in a remarkable degree.

THE RELATIVE INDICATIONS FOR THE USE OF ANTIPYRINE AND ACETANILIDE.

DR. ROBERT PARKE, in the "Lancet," concludes that the use of antipyrine or of acetanilide should be governed by the character of the affection which is to be treated. Antipyrine is the indicated remedy in sthenic cases, while acetanilide will act most effectively in cases of the asthenic type. He is inclined to attribute the evil results which have been reported as due to the administration of antipyrine to the asthenic character of the disease, rather than to personal idiosyncrasy, to which they have been ascribed by other observers. He favors the plan of administering large doses at long intervals, when either of the drugs is used in the treatment of hyperpyrexia.

PHYSOSTIGMA IN TRAUMATIC TETANUS.

MR. BELCHER ("Lancet," August 18, 1888) reports success in the treatment of a case of tetanus by the extract of physostigma. The disease resulted from a lacerated wound of the hand, and exposure to cold. Pharyngitis and stiffness of the muscles of the neck were followed by the symptoms of tetanus. In five days' time ninety-six grains of the extract of physostigma were taken by the patient, in doses of from one to two grains every hour, and in nine days forty-eight grains were taken. No paralytic symptoms appeared during the course of the disease.

GANGRENE FOLLOWING THE HYPODERMATIC INJECTION OF COCAINE.

DR. JOHNSTON, of Georgia, reports in the "Medical News" the history of a case of ingrowing nail, for the relief of which he removed a wedge of tissue, using half a grain of cocaine hypodermatically as an anæsthetic. After thirty-five minutes the patient became cyanosed, with rapid, feeble, and irregular action of the heart, and disappearance of the radial pulse. The use of ether hypodermatically and of amyl nitrite gave immediate relief, but, on changing the dressing on the following day, the tissues at the site of operation were found to be in a state of dry gangrene, being cold, bloodless, blackened, and mummified. The patient recovered in about two weeks' time under appropriate treatment.

ELECTRICITY IN INFLAMMATORY DISEASE OF THE UTERINE APPENDAGES.

DR. E. H. GRANDIN, in the "Medical Record," advocates the employment of the galvanic current in cases of perimetritic inflammation not characterized by recurrent attacks of peritonitis or the manifest physical signs of pyosalpinx. He has not found it necessary to employ currents of high intensity, but has had more satisfactory results from the use of weak currents of long duration. Galvanism should be used until all tenderness on pressure of the vaginal vault has disappeared, the positive pole being inserted in the vagina, with the negative pole placed on the abdomen, and made to cover a large area. After the tenderness has disappeared the faradaic current should be used. The uterus should be supported by means of a tampon in the intervals between the sittings, which should be held every other day. By these simple measures many patients may be saved the dangers and mutilation of oophorectomy.

THE CÆSAREAN SECTION.

IN the "Medical News" of August 25, 1888, an editorial on this subject gives the following interesting statistics: During the first six months of the present year there have been reported twenty-six cases of the improved Cæsarean section—nineteen in Europe with three deaths, and seven in America with the same number of deaths. Two of the deaths in the United States were of patients hopelessly diseased at the time of operation, and the third was at the time profoundly narcotized with morphine. Sixteen operations, performed after the method recommended by Sænger, with one exception, have been done in the United States since the beginning of 1887, with eight deaths. Five cases were *favorable*, with one death; nine were *unfavorable*, with five deaths; and two were *hopeless*, with two deaths. Fourteen children were saved. In this country the high percentage of mortality may be explained by the fact that in almost all the cases in which the operation was performed the patients were exhausted by prolonged attempts to deliver *per vias naturales* before the operative measures were employed, or were the subjects of incurable disease. The lesson which is to be learned from this fact is plain—success depends on prompt and decisive action. At present, statistics show that hospital cases recover in larger proportion than those operated upon in private houses.

ABDOMINAL SECTION AND DRAINAGE IN PUERPERAL PERITONITIS.

DR. WOODWARD reports, in "The Boston Medical and Surgical Journal," the history of a case of purulent peritonitis, treated by abdominal section and drainage, with recovery of the patient. The operation was done six weeks after parturition, and the abscess, which had been at first circumscribed, had ruptured into the cavity of the peritonæum on the day before the operation. A solution of hydronaphthol, and subsequently boiled water, were used in the irrigations.

ABDOMINAL SECTION IN ADVANCED EXTRA-UTERINE GESTATION.

DR. ROBERT P. HARRIS, of Philadelphia, records in "The American Journal of the Medical Sciences" a table of thirty operations for the removal by abdominal section of the living and viable fœtus in extra-uterine gestation. Five of the mothers recovered, and eleven of the children lived for six months or longer. Four of the maternal recoveries occurred in the last

ten operations, and in two cases it is known that the children are now alive and well at the ages of six and eight years. Many of the maternal deaths were undoubtedly the result of delay in operating, due to the patients' unwillingness to submit to the operation, and of the exhausted condition of the patient due to prolonged pseudo-labor. If the conditions are such that the placenta can be removed and the hæmorrhage arrested by ligation of the blood-vessels, this should be done; but when its attachments are such that the ligation of the placental vessels is impracticable, the organ must be left *in situ*, and dependence be placed on drainage and irrigation.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 28, 1888:

DISEASES.	Week ending Aug. 21.		Week ending Aug. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	26	9	37	6
Scarlet fever.....	91	10	78	22
Cerebro-spinal meningitis....	2	1	2	1
Measles.....	121	12	97	10
Diphtheria.....	82	31	59	24
Small-pox.....	2	0	0	0

Back Number Wanted.—If any subscriber to this journal has a copy of the issue for January 2, 1886, which he does not care to retain, and will mail it to the office of the journal, he will confer a favor on another subscriber who wishes to complete his file.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 19 to August 25, 1888:*

VOLLUM, EDWARD P., Lieutenant-Colonel and Surgeon. Leave of absence extended two months. Par. 17, S. O. 192, A. G. O., August 20, 1888.

ALEXANDER, RICHARD H., Lieutenant-Colonel and Surgeon. Detailed a member of Board to meet at San Carlos, A. T., August 28th, to select a site for a new post at that place. Par. 1, S. O. 44, Division of the Pacific, August 15, 1888.

SMITH, JOSEPH R., Lieutenant-Colonel and Surgeon, Medical Director, Department of Dakota. To inspect Forts Pembina, Totton, Buford, Abraham Lincoln, and Yates, Dakota Territory. Par. 4, S. O. 77, Department of Dakota, August 13, 1888.

HEGER, ANTHONY, Surgeon. In addition to his other duties, to attend to the duties of the Medical Director, Division of the Atlantic, during the absence of Colonel Charles Sutherland. Par. 4, S. O. 170, Division of the Atlantic, August 18, 1888.

WRIGHT, JOSEPH P., Major and Surgeon. Detailed as a member of Army Retiring Board, Fort Leavenworth, Kansas vice A. A. Woodhull, Major and Surgeon, U. S. Army, relieved. Par. 10, S. O. 190, A. G. O., August 17, 1888.

WOODHULL, A. A., Major and Surgeon. Relieved from duty with Army Retiring Board, Fort Leavenworth, Kansas. Par. 10, S. O. 190, A. G. O., August 17, 1888.

AINSWORTH, FRED. C., Captain and Assistant Surgeon. To proceed to Atlanta, Ga., and inspect the new Army Hospital at that place. Par. 18, S. O. 192, A. G. O., August 20, 1888.

MAUS, LOUIS M., Captain and Assistant Surgeon. Having completed rifle practice at Camp S. B. Luce, Fisher's Island, N. Y., to return to his proper station (Fort Schuyler, New

York Harbor). Par. 3, S. O. 171, Division of the Atlantic, August 20, 1888.

OWEN, W. O., JR., Captain and Assistant Surgeon, Fort Leavenworth. To report for temporary duty to the Commanding Officer, Fort Gibson, Indian Territory. Par. 1, S. O. 104, Department of the Missouri, August 20, 1888.

MASON, CHARLES F., Assistant Surgeon. Ordered to Fort Washakie, Wyoming Territory, for duty. Par. 5, S. O. 190, A. G. O., August 17, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 25, 1888:*

SIMONS, MANLY H., Surgeon. Detached from the Constellation and ordered to the Naval Academy.

RUSSELL, A. C. H., Passed Assistant Surgeon. Detached from the Constellation and ordered to the Naval Academy.

DICKSON, S. H., Passed Assistant Surgeon. Detached from the Marine Barracks, Washington, D. C., and ordered to the U. S. S. Richmond.

CORDEIRO, F. J. B., Passed Assistant Surgeon. Ordered to the U. S. S. Mohican.

FARWELL, W. G., Surgeon. Detached from the U. S. S. Saratoga and ordered home to wait orders.

DICKINSON, DWIGHT, Surgeon. Detached from the U. S. S. Portsmouth, and ordered home to wait orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending August 27, 1888:*

SAWTELLE, H. W., Surgeon. Directed to proceed to San Diego Cal., and inspect Service at said station. August 17, 1888.

HUTTON, W. H. H., Surgeon. To proceed to Way Cross, Ga., and assume charge of inspection and fumigation stations. August 18, 1888.

URQUHART, F. M., Passed Assistant Surgeon. To report to Surgeon Hutton for special duty. August 19, 1888.

GEDDINGS, H. D., Assistant Surgeon. Appointed an assistant surgeon August 18, 1888. To report to Surgeon Hutton for special duty. August 19, 1888.

WERTENBAKER, C. P., Assistant Surgeon. Appointed an assistant surgeon, August 18, 1888. Assigned to duty at the Port of Norfolk, Va. August 20, 1888.

STONER, J. B., Assistant Surgeon. To proceed to Charleston, S. C., for temporary duty. August 20, 1888.

GUITÉRAS, JOHN, Passed Assistant Surgeon. To proceed to St. Mary's River, Fla., and establish and take command of refuge camp at that point, the camp to be known as Camp Perry. August 22, 1888.

Society Meetings for the Coming Week:

MONDAY, *September 3d*: Medico-Chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *September 4th*: Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Franklin (quarterly) and Niagara (Lockport), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore, Md., Academy of Medicine.

WEDNESDAY, *September 5th*: Harlem Medical Association of

the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Bridgeport, Conn., Medical Association.

THURSDAY, *September 6th*: New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Obstetrical Society of Philadelphia.

FRIDAY, *September 7th*: Practitioners' Society of New York (private); Baltimore, Md., Clinical Society.

Obituaries.

Thomas T. Sabine, M. D., professor of anatomy in the College of Physicians and Surgeons, died on Thursday, August 23d, at the house of his father, Dr. Gustavus A. Sabine, in East Twenty-fourth Street. The deceased was graduated from the College of Physicians and Surgeons in 1864, after which he served on the surgical house staff of the New York Hospital. At about the termination of that service he was attacked with pulmonary hæmorrhage, and thereafter was a chronic invalid, although at times, for months together, his wonderful power of will enabled him to attend to duties that many a stronger man would have been unable to get through with. During the score or more of years that his battle with disease lasted he served as a surgeon to Bellevue and St. Luke's Hospitals, but he never fairly engaged in private practice.

Dr. Sabine was of slender build, but his power of endurance was very great. Mentally, he was quick of comprehension and logically precise. Before his graduation in medicine he was recognized as an anatomist of uncommon attainments, and he subsequently taught anatomy with a clearness and impressiveness rarely equaled. As a surgeon, he was an accurate diagnostician and a clever operator, and his opinion was much sought for in consultation. He seldom contributed to medical literature, but his graduation thesis was published. It was not alone in professional matters that his opinion was held in high esteem; the quickness of his perceptions, the unerring precision of his judgment, and, above all, his unconcealed detestation of shams caused great deference to be paid to him on all scientific, literary, political, and social questions. He was a brilliant man intellectually, a keen but kindly critic, phenomenally astute in his estimate of men, and a delightful companion. Everybody who knew him, even casually, was his admirer and feels a personal loss in his untimely death.

OBITUARY NOTES.

George D. Townshend, M. D., of Roxbury, Mass., died at Norfolk, Va., on Monday, August 20th, in the forty-seventh year of his age. The deceased was born in Providence, R. I., and in 1865 was graduated from the Department of Medicine of the University of Pennsylvania, in which institution he was for several years demonstrator of anatomy and surgery. He was a member of the Norfolk, Mass., District Medical Society, of which he was at one time secretary and librarian.

John N. Freeman, M. D., of Brooklyn, died at Omaha, Neb., on Saturday, August 18th, at the age of sixty-three. The deceased was graduated from the Medical Department of the University of the City of New York in 1860. He was a member of the Medical Society of the County of Kings, of the New York Pathological Society, the Brooklyn Pathological Society, the New York Obstetrical Society, and had been an attending surgeon to St. John's Hospital, Brooklyn.

William H. Page, M. D., of Boston, died at Los Angeles, Cal., on Wednesday August 22d, at the age of sixty-one. He was born in Rochester, N. H., and was graduated from Harvard Medical School in 1853. During the civil war he served as a surgeon in the army, in which capacity he was noted for his physical endurance and devotion to duty. He was a member of the Massachusetts Medical Society and was at one time City Physician of Boston.

Letters to the Editor.

THE EXPLORING NEEDLE IN DIAGNOSIS.

RANDLEMANN, N. C., *August 22, 1888.*

To the Editor of the New York Medical Journal:

SIR: Your issue of August 18th contains an able and timely article from Hermann M. Biggs, M. D., on "The Accidents incidental to the Use of the Exploring Needle for Diagnosis." It is seldom that we see a question stated so ingeniously. Being on the negative side, he makes the *dangers* to appear prominently; at the same time he defends the use of the exploring needle, and concedes to it all the importance its *proper* use merits. He cites four cases of general peritonitis resulting from puncture of a distended gall-bladder; to these I wish to add another.

On April 24, 1888, Dr. D. A. Stanton called me to see Mrs. B., aged sixty, who had been sick for several weeks. The diagnosis of an impacted calculus, with distended gall-bladder, was made. A quart of sweet-oil, to be taken in twenty-four hours, was prescribed. This did no good, and on May 3d puncture of the gall-bladder was suggested, with a view to further operative interference. Every antiseptic precaution was observed. Immediately after withdrawing half a syringe of tarry bile, the patient complained loudly of severe pain in the region of the puncture. Collapse came on; the pulse could hardly be felt; the extremities were cold; there was clammy sweat and a hard tympanitic abdomen. After an hour the patient rallied, but died of peritonitis one week later. The needle used in this case was about twice as large and long as a small hypodermic needle.

J. W. LONG.

Book Notices.

The Abortive Treatment of Specific Febrile Disorders by the Biniiodide of Mercury. By C. R. ILLINGWORTH, M. D. (Ed.), M. R. C. S. London: H. K. Lewis, 1888. Pp. 24.

FROM the adoption of the germ theory to the germicidal treatment of all the specific fevers a short syllogistic bridge seems, at a first glance, to give easy passage, and many therapeutic wayfarers have ventured on its span, closing their eyes to the vertiginiferous chasm beneath them, to reach an insecure footing on the distal brink. The author of the little book before us jumps to the conclusion that because the biniiodide of mercury appears, in laboratory experiments, to be the "most potent of germicides," it must therefore act as a panacea for every malady hypothetically ascribed to germs, from plague to pertussis, overlooking, apparently, the circumstance that, even granting all his premises, an inevitably mortal dosage of the drug in question would be required to satisfy the minimum bactericidal estimate of the microculturists. Forasmuch, moreover, as his treatment prescribes the additional free adminis-

tration of iron, chlorate of potassium, and stimulants, the reader is left in doubt as to the amount of credit to be assigned to the biniodide in the recovery. At all events, probably few practitioners will regard chicken-pox and mumps as tests of the life-preserving efficacy of this irritant medicament. To one of the author's statements we must take serious exception in the interest of public health, namely, that patients with scarlet fever may be allowed to associate with unprotected persons "at the end of the tenth or twelfth day" if the throat is free from inflammation. His other opinions on uncertain subjects we must concede his right to hold.

Ptomaines and Leucomaines, or the Putrefactive and Physiological Alkaloids. By VICTOR C. VAUGHAN, Ph. D., M. D., Professor of Hygiene and Physiological Chemistry in the University of Michigan, and FREDERICK G. NOVY, M. S., Instructor in Hygiene and Physiological Chemistry in the University of Michigan. Philadelphia: Lea Brothers & Co., 1888. Pp. viii-13 to 316. [Price, \$1.75.]

THIS book can not fail to prove interesting and profitable to the majority of the members of the medical profession in this country. The subject is comparatively new—in fact, this is the first treatise on it of American authorship. The authors were well qualified for their work both in the matter of original research and in a careful study of the literature of the subject. While many pathologists will fail to agree with them in the statement that bacteria only become injurious by generating animal alkaloids or extractives, it must be confessed that such a theory gives a simple and rational explanation of the process of infection. In a few instances it may be considered as demonstrated that a morbid process is due to an alkaloid and that the bacterium would remain harmless were it not for the resultant alkaloid, but this does not prove the universality of the rule.

The general tone of the book is scientific, and it nowhere manifests the polemic spirit so noticeable in some of the recent books on the same subject. Liberal space is given to a consideration of tyrotoxin, but, as this substance was discovered by Dr. Vaughan, it is proper that its history and properties should be fully set forth in this book. On the whole, this volume may be considered as the fullest treatise on the subject in the English language, and to those who wish to know the present status of the ptomaine question it will be of great service. It is unquestionably the duty of every physician to have a general knowledge of the movement of events in this new department of pathology, for the signs of the times point to the development in the near future of important practical results from the study of the animal alkaloids.

BOOKS AND PAMPHLETS RECEIVED.

Commonwealth of Pennsylvania. State Board of Health. Camp Hygiene. Addressed to Medical Officers of the National Guard of Pennsylvania.

A Case of Extra-uterine Pregnancy; Embryo destroyed by a Twenty-milliampère Current without Interruptions; together with Remarks on the Best Method of Using Electricity for this Purpose. By A. H. Buckmaster, M. D., of Brooklyn. [Reprinted from the "Medical News."]

Ninth Annual Announcement and Catalogue of the Northwestern Medical College, St. Joseph, Mo., Session of 1888-'89.

Report on the Progress of Genito-urinary Surgery. Some Points in the Management of Urethral Stricture. The Specific Microbe of Gonorrhœa. By E. R. Palmer, M. D., Professor of Physiology and Pathological Histology, Medical Department, University of Louisville. [Reprinted from the "American Practitioner and News."]

Proceedings of the Sanitary Convention held at Albion, Mich., December 6 and 7, 1887, under the Direction of a Committee of the State Board of Health and a Committee of Citizens of Albion. [Supplement to the "Report of the Michigan State Board of Health" for the year 1888.]

Renal Tenesmus. By Nathan Bozeman, M. D., etc. [Reprinted from the "Medical Record."]

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

Spontaneous Hæmatoma of the Orbit.—Panas ("Arch. d'ophthal.," March-April, 1888) contributes the history of a new case of this rare affection for the purpose of strengthening the belief that spontaneous hæmatoma of the orbit may be a reflex vaso-paralytic manifestation occurring in dyspeptics and dependent on dyspepsia. The lesions of the vascular walls do not alone suffice to explain the hæmorrhages. If a young person is dyspeptic he may have reflex congestive attacks in any part of the body, and these hæmorrhages will be the more frequent the more diseased are the vascular walls. It may not be malapropos to inquire whether the frequent attacks of epistaxis so common among the young are not indicative of dyspepsia in those who suffer from them. In regard to orbital hæmatoma, it is probably more logical not to open the orbital clot, but trust to its gradual absorption, though early interference may be demanded to avoid a loss of function in the optic and ciliary nerves from compression by the clot.

Coloboma of the Iris and Macular Chorioiditis.—De Lapersonne (*ibid.*) concludes that the hypothesis of a defect of obliteration of the ocular cleft is by no means a satisfactory explanation of the origin of coloboma of the iris. He thinks it probable that this originates in the same way as do the cases of irideremia and other congenital anomalies of the iris, such as polycoria, corectopia, etc. All these lesions are caused by diathetic inflammation of the initial period of intra-uterine life, and are rather embryonic than foetal lesions. They are explained by the production of plastic exudations, demonstrated anatomically by Deutschmann, and which end either in arrest of development or in atrophy of a part of the already formed iris.

The Value of Erythrophleine in Ophthalmology.—Panas (*ibid.*) has been experimenting with this new so-called anæsthetic, and from his observations draws the following conclusions: 1. As a local anæsthetic, erythrophleine is much less valuable than cocaine. 2. Although its anæsthetic action is much more lasting than that of cocaine, the inflammation and sharp pain accompanying its application render its use improper in ophthalmic surgery.

Remarks on Two Deep Abscesses of the Orbit.—Terrier (*ibid.*) makes some practical observations on two rather unusual abscesses of the orbital cavity. In one case the abscess resulted from an osteo-periosteitis of the internal wall of the orbit. There was no strumous or syphilitic diathesis, but fifteen years before the patient had received a violent blow upon the front part of the head which caused a severe hæmorrhage followed by violent dental neuralgia. The blow probably caused a lesion of the nasal mucous membrane on a level with the orbito-nasal wall, which was followed by inoculation of the wound by communication with the external air through the nasal cavities, and by suppuration and caries of the bone, with elimination of the sequestra. In the other case the patient had had a small abscess or furuncle of the left eyebrow, which had healed without treatment. Shortly afterward a focus of inflammation appeared at the inner angle of the opposite eye, caused doubtless by inoculation with the discharge from the furuncle by the finger of the patient. The superficial abscess became deep, and this condition was still further aggravated by trophic disturbances in the cornea, and by exophthalmus.

An Operation for Pterygium.—Hobby ("Amer. Jour. of Ophthal.," April, 1888) suggests the following operation as an improvement on

the usual methods of operating for the relief of pterygium: The conjunctiva is to be incised along the upper margin of the pterygium and connected with a vertical incision made from the margin of the cornea upward. The pterygium is then to be separated from the cornea, and a vertical incision downward is to be made, starting from the corneal margin. The incisions in the conjunctiva are then to be extended to the base of the growth, joined, and the pterygium then carefully dissected off. With a strabismus hook the conjunctiva is to be freely detached from the sclera, so as to secure coaptation without strain. The upper flap of the conjunctiva is then to be brought down and secured by two stitches. This method secures the change of the axis of the pterygium so that it becomes tangential to the lower margin of the cornea; and, secondly, the whole cicatrix is removed from the exposed portion of the eye, and is covered by the lower lid.

Panophthalmitis without Open Wound.—Rallaud ("Rec. d'ophthal.," April, 1888) discusses at some length the possibility of the occurrence of panophthalmitis without the existence of any open wound, and the manner of the entrance of external microbes through the medium of the respiratory passages—that is, the nasal meatus and the lacrymal duct. He also considers the subject of the existence of germs in the healthy eye. It is a fact which can not be denied, that the internal tissues of the eye may be invaded by a suppurative process without communicating with the external air by means of an open wound of the eye or of any other part of the body, and even in the absence of any general infecting disease. This panophthalmitis is the result of two causes: 1. The presence of germs which have entered the eye from without through the medium of intact respiratory passages; and, 2, a disturbance of nutrition, transforming the media of the eye into a soil favorable for the multiplication and development of microbes.

Pathogeny and Treatment of Progressive Myopia.—Ruiz and Koenig (*ibid.*) present the three following propositions for acceptance: 1. The visual accommodation is not, as has hitherto been believed, a simple matter of muscular contractility for near vision and of inertia for distant vision. There is an active force, still more powerful perhaps, destined to flatten the lens and to counterbalance the action of the first. This force resides in the layer of longitudinal fibers of the chorioid mentioned by Müller and Schweigger. 2. The complications of progressive myopia—such as posterior staphyloma, liquefaction of the vitreous, and detachment of the retina—are simply the consequence of the exaggerated contraction of the longitudinal muscular layer of the chorioid. 3. To prevent the increase of a myopia and preserve vision, the ordinary therapeutic methods are insufficient. The attention of scientific surgeons should be directed to the consideration of the subject, that they may decide whether extraction of the transparent lens in cases of external myopia is not necessary to prevent further complications and to avoid the destruction of vision.

A Form of Granular Conjunctivitis due to Syphilis.—Goldzieher ("Ctrbl. f. prakt. Augenh.," April, 1888) reports two cases of granular conjunctivitis which he thinks were due to syphilis. In these two syphilitic patients there was a marked diffuse infiltration of the conjunctival mucous membrane, which appeared like a pale colloid infiltration, entirely destitute of blood. In the midst appeared a mass of granulations resembling trachoma granules. Both lids were thickened, especially the lower. In the first case there was in addition a subacute iritis, and in the second case a parenchymatous inflammation of the cornea, and incipient inflammation of the uveal tract. In both cases the lymphatic glands were swollen, in the second case both general lymphadenitis and inflammation of the testicles were present. In both cases, after a systematic mercurial treatment, the inflammatory symptoms in the eyeballs disappeared, as did also the peculiar appearances in the conjunctiva, without any local treatment.

Quinine Amblyopia.—Lopez ("Rec. d'ophthal.," February, 1888) reports a case of this kind occurring in a man aged forty-six. Five months before Lopez saw him he had in the same day two very serious attacks of pernicious malarial fever, accompanied by coma, distortion of the mouth, and a very high temperature. For this he was given during the twenty-four hours 20 grammes, or 320 grains, of the bisulphate of quinine. When he regained consciousness on the next day he was totally deaf and blind. The hearing power soon returned, but the blindness remained complete for ten days before any improvement

began. Subsequently, the malarial fever having again appeared, he took additional doses of quinine, and the sight again became much worse. The patient had a hypermetropia of D. 6, the tension was normal, and V. = $\frac{2}{3}$. When Lopez examined him he stated that he saw everything through a thin blue cloud, and that at times his vision was entirely obscured. There was paresis of accommodation. He recognized colors, but sometimes mistook green for gray and violet for blue. The visual field was narrowed to less than 20° in all directions, and upward it was absolutely limited to the point of fixation. The pupils were sluggish. The media were clear. The optic discs were ashen gray, and the arteries on their surfaces were very small and were lost a short distance beyond their margin. The improvement in vision during the five months succeeding the beginning of the attack was very slight.

Further Experiments with Erythrophleine.—Alt ("Amer. Jour. of Ophth.," March, 1888) finds that Merck's preparation of this drug has an undoubtedly anæsthetic effect on the conjunctiva and cornea, but differs in its action from cocaine. Even in a weak solution it causes great pain and irritation, and, although a diminution of sensibility is felt much more quickly than with cocaine, it requires much more time to produce full anæsthesia. The anæsthesia produced by erythrophleine lasts much longer than that produced by cocaine. It does not influence the accommodation, and has no influence on the sphincter of the pupil, unless it be to cause a slight myosis.

The Influence of the Removal of the Punctum Proximum and Greater Correction with Convex Glasses in Hypermetropia.—Culbertson (*ibid.*) suggests that the principle of removing objects in proximal vision might be advantageous in hypermetropia as well as in myopia, and that a fuller correction might be given primarily without the danger of inducing artificial myopia when the convex correcting glass is applied. He believes that a successful result is attained by the diminution of accommodation induced by removal of the object from the eye, the convex glass performing the office of the ciliary muscle, and by the relaxation of the latter, diminishing the asthenopia. This plan succeeds best in those whose age endows them with an amplitude of ciliary-muscle power, and in whom the relation of this force to the degree of hypermetropia can no longer be sustained or compensatory.

An Operation for Simple Forms of Entropium.—Allport (*ibid.*) suggests the following operation: A needle armed with a double thread should be inserted into the skin, midway between the external and internal canthus, and just below the upper boundary of the tarsus. The lid meanwhile should be held away from the eyeball and slightly downward by forceps. The needle should be forced directly through the lid, and on its emergence from the conjunctiva it should be pulled through until about three inches of thread remain on the outside of the lid. The needle should then be inserted into the lid from the conjunctival surface and forced again directly through the lid. On emerging on the outer side of the lid it should be pulled through and the suture snipped. The track of the two sutures should be side by side and about two lines apart. The loop of the suture should include skin, muscle, tip of tarsus, and conjunctiva, and its two ends should be tied tightly and securely. Five sutures like this should be inserted, and the lid then dressed in the ordinary way. The sutures are allowed to remain in position for a week or ten days.

Photographing the Eye.—Cohn ("Ctrbl. f. prakt. Augenh.," March, 1888) believes that the main difficulty in photographing the eye has been overcome by the discovery of the so-called "lightning-powder." He has found that an almost infinitesimal quantity of this powder suffices for the best pictures. The action of this powder is so extremely rapid that the pupil of the eye which is dilated in the dark only begins to contract as the instantaneous photography by the light of the powder is completed. Cohn has succeeded in taking most perfect photographs of congenital pupillary membrane, of congenital coloboma iridis, and of the normal pupil, showing its actual size in the dark.

The Use of Creolin in Ophthalmic Practice.—Purtscher (*ibid.*) advises the employment of a 1-per-cent. solution of creolin in simple conjunctivitis, phlyctenular conjunctivitis, papillary trachoma, blennorrhœa of the lacrymal passages, all the varieties of ulcerative keratitis, even with hypopyum, and parenchymatous keratitis. He believes that it possesses powerful antiseptic properties. Three or four drops of the

solution may be used several times a day. It is absolutely without any poisonous qualities.

Atrophy of the Optic Nerves associated with Dropping Fluid from the Nostril.—Emrys-Jones ("Ophth. Rev.," April, 1888) reports a case of this kind occurring in a man, aged sixty-five, who was first seen on January 21, 1887. For twelve years he had suffered from a chronic influenza. For the last three years the discharge had not been so profuse, and from this time he dated the failure of his vision. He had had no headache for twenty years. There was no hereditary history. His sense of taste was normal, but his sense of smell was not acute. The soft palate and the nasal mucous membrane were removed. There was no thyroid enlargement and no proptosis. There was more discharge from the left nostril than from the right, and at least half an ounce of fluid came away during an hour's time; at night there was no discharge. In the right eye, refraction hypermetropic, $V. = \frac{5}{6}$; color perception normal; irregular concentric narrowing of the field; and a white and atrophic optic disc. In the left eye, $V. =$ counting fingers on temporal side, with marked concentric narrowing of the field and a pale atrophic optic disc. The fluid did not reduce Fehling's solution. When boiled it became cloudy, and when acetic acid was added after boiling, the precipitate became flocculent. A slight precipitate was produced by the addition of ether and absolute alcohol. It contained chlorides and traces of sulphates.

Movable Masses of Pigment in the Anterior Chamber.—Bock ("Kl. Mntsb. f. Augenheilk.") reports a strange condition occurring in a man aged nineteen. He was admitted to the hospital for a pneumonia affecting the right lung. While there it was noticed that there were some dark bodies floating in the anterior chamber of which the patient knew nothing. In the right eye there was a cloudy cornea, and strabismus divergens, dating from an attack of measles in his third year. The patient died from gangrene of the lung, and the left eye was subsequently examined. Upon the inner surface of the cornea, near the angle of the anterior chamber, there were several small black bodies, which were readily removed. On examination, they were found to consist mainly of pigment cells, resembling the polygonal cells on the posterior surface of the iris. On the anterior capsule of the lens there was a ring of pigment granules corresponding to the circle of the sphincter iridis. Outside of this ring there were several small patches of pigment on the capsule. Bock regards the case as a congenital anomaly, probably one of defective involution of the pupillary membrane, with abnormally developed pigmentary excrescences on the margin of the pupil.

A Singular Anomaly of Motility of the Eyelids and Eyes.—Adamük (*ibid.*) reports the case of a woman, aged forty, who manifested the following strange phenomenon: With every movement of the jaws in eating, the eyelids were widely opened and the upper lids lifted up, while the eyes became more and more prominent, until they were finally entirely uncovered and exposed to view. When the patient ceased chewing, the eyes gradually receded, and the lids regained their normal position. There must have been a peculiar relation of the orbital veins to the chewing or masticating muscles, and in all probability the anomaly in question was the result of a venous stasis. The phenomena were not noticed during speaking. The condition had existed for many years and had increased in severity.

Argyria of the Conjunctiva.—Grossmann ("Ophth. Rev.," June, 1888) reports a case in which the left eye of a patient showed an almost black discoloration of the ocular and palpebral conjunctiva. Grossmann cut a number of small pieces out of the conjunctiva, the examination of which showed no trace of color in the epithelium. The coloring was exclusively confined to the elastic fibers, which were stained a deep brownish black, and which in teased specimens gave beautiful pictures. In some places solitary and agglomerated grains of a deep black pigment were visible. A careful examination showed that these grains of pigment were nothing but old elastic fibers, stained and broken up into a granular detritus.

Some Points in the Physiological and Pathological Conditions of the Pupil and Accommodation.—Jessup ("Ophth. Rev.," June, 1888) decides from his own investigations that there are no radial fibers in the iris capable of dilating the pupil. The fact that the mydriatic nerves are vaso-constrictor as well would tend to point to a change in

the muscular fiber, since when the pupil is widely dilated the muscular fiber would not be so well supplied with blood. The short ciliary or myotic nerves may be traced by the lenticular ganglion to the third nerve, and to its origin from a column of nerve-cells in the anterior part of the central gray matter below the aqueduct of Sylvius, beneath the anterior corpus quadrigeminum and the posterior commissure. Fibers of the third nerve pass through the red nucleus, and on emerging run through the horizontal bundle of fibers, which probably connect the two third nerves, as stimulation here gives rise to contraction of both pupils. The mydriatic nerve course is much longer than the myotic, owing to its communication with the spinal cord. The mydriatic center of Waller and Budge is described as situated in the lower cervical and upper dorsal regions, and is connected with the fibers of the second dorsal nerve. There is a center situated in the medulla oblongata connected through the spinal cord with the second dorsal nerve, as stimulation of the medulla gives rise to mydriasis if the rest of the mydriatic tract be intact.

Sudden Blindness due to Lesions of both Occipital Lobes; Cortical Anopsia.—Chaffard ("Rec. d'ophthal.," March, 1888) reports four cases, one of them under his own care, of this interesting disease. He considers it proved that pure hemianopsia of cerebral origin, without other sensory or motor symptoms, is due to destruction of a certain region in the occipital lobe. The appearance of the group of symptoms known as cortical blindness occurs at two different periods. The first lesion appears accompanied by a more or less pronounced hemianopsia. Then occurs the second lesion, symmetrical with the first, but in the opposite hemisphere, and complete anopsia follows. These two attacks are separated by a very variable period of time, during which the optical faculties often seem to have recovered their power. Simultaneous lesion of both occipital lobes is very exceptional. Whatever may be the method of production of the anopsia, the symptoms are always as follows: Absolute blindness even for luminous sensations; preservation of the so-called optical memory; integrity of the fundus of the eye; pupils of equal size, moderately dilated, and reacting, though somewhat sluggishly, to the reflex stimulus of light.

Curability of Detachment of the Retina by Aspiration of the Sub-retinal Fluid.—Galezowski (*ibid.*) draws the following conclusions from his own observation and experience: 1. Detachment of the retina is not an incurable disease. 2. The detached retina may regain its functions, at least throughout a certain extent. 3. Aspiration of the sub-retinal fluid without suture may cause an improvement in the patient's vision. 4. Aspiration with application of a suture only succeeds in a very limited number of cases.

New Forceps for the Extraction of a Piece of the Anterior Capsule.—Armagnac (*ibid.*) has modified his former forceps by giving to the extremity of the teeth, or biting-part, a double curvature like a bayonet, the first at right angles of one blade toward the other, the second from before backward, the curved forceps being held vertically with the concavity of the blades forward. When the forceps are held tangential to the lens, with the teeth grasping the capsule, the blades are in a plane anterior to the iris, and therefore can not grasp it when the teeth are closed, because the iris projects between the branches and still leaves an interval of more than a millimetre and a half.

Ophthalmic Migraine and Astigmatism.—Martin ("Ann. d'oc.," March-April, 1888) gives the results of his observations on twenty cases of migraine with reference to the connection between this disorder and astigmatic errors of refraction. He recognizes the various forms of ophthalmic migraine admitted by Charcot. A partial contraction of the ciliary muscle was observed in all cases. A unilateral ophthalmic migraine corresponds to a unilateral partial contraction, or is localized on the side of the strongest contraction. Sometimes a unilateral ophthalmic migraine may exist in a patient with ordinary bilateral migraine. Bilateral ophthalmic migraine is accompanied by bilateral contraction. In seventeen of the twenty cases, correction of the refractive error was produced by the contraction. In those cases the contraction was spasmodic. The astigmatic theory of ophthalmic migraine is based upon the following facts: 1. The constancy of the astigmatic contraction. 2. The localization of the unilateral migraine on the side of this contraction. 3. The beneficial effect of cylindrical glasses.

A New Practical Ophthalmometer.—LeRoy and Dubois (*ibid.*) give the following description of their new ophthalmometer: A system of two plates of thick glass, with parallel thick surfaces, mounted in a cubical box, is placed in front of the objective of a telescope. These plates rotate round a common axis, so that when inclined upon each other they double the image of a point into two images as far from each other as may be desired. A screw, the movement of which influences the corresponding plate, arrests each of the needles in the desired position. The telescope consists of an achromatic objective of about twelve centimetres and a powerful ocular. Upon its longitudinal barrel is fixed a graduated transverse rule, and the length of the tube is so determined that the distance of the object is about three hundred and forty millimetres. This rule carries two sights, the images of which, reflected by the cornea, should be observed through the telescope. One of these sights consists of a white rectangle framed in black, while the other consists of a similar rectangle carrying seven stripes, alternately black and white, five millimetres in width. These sights are enameled and marked on a traveler. The cubical box is fixed to the telescope by a smoothly gliding ring, on the posterior border of which is a notch. A pin penetrating this notch assures to the box such a position that the axis of rotation of the plates is normal to the rule. The telescope revolves easily on its own axis, and carries a needle, parallel to the rule, which moves in front of a semicircle graduated at distances of five degrees, and indicates the inclination to the horizon of the meridian under examination. Either of the notches in the anterior borders of the cubical box and the superior border of the rule, placed at zero, forms a plane of direction which passes through the object. This plane and line of direction allow of placing the object at the point of fixation approximately, without the necessity of looking through the telescope. The telescope may be elevated or lowered on a hollow column or support, which rests on a solid tripod. Finally, a Placido's disc is added to the apparatus for the examination of irregular cornea, and when in use occupies the position of the cubical box.

Binocular Astigmatism.—Culbertson ("Amer. Jour. of Ophth.," May, 1888) offers the following explanation of binocular astigmatism: In binocular vision, when astigmatism is present, the distance is so great in remote vision that the visual axes are each parallel to the same perpendicular and to each other, and when the ocular muscles are harmonious in action, objects are seen in normal form. So will near vision be perfect in astigmatism, provided this due balance is maintained in these muscles. In proximal vision, the interni, inferior oblique, and superior and inferior recti muscles must exercise increased force and act in concert. If these muscles so act, there can be no binocular astigmatism which requires recorection after each eye has been separately corrected, or in proximal vision. But if these muscles are not harmonious, then, the plane of the rays of light remaining the same—that is, vertical—and the axis of rotation of the eye at its upper extremity inclining to the right or left, it follows that the relation of the axis of the cylinder must be made to correspond with the modified position of the defective corneal meridian. In distant vision the ocular muscles may or may not be harmonious, but, if these are normally balanced in action when accommodation is at rest, this relation may be modified in near vision, and the axis of rotation so changed as to demand a recorection for near and binocular vision.

The Treatment of Gonorrhœal Conjunctivitis.—Burchardt ("Ctrbl. f. prakt. Augenh.," May, 1888) recommends the following method and instrument for exposing as large a portion as possible of the palpebral and ocular conjunctiva to local treatment: He has devised a pair of forceps, one blade of which ends in a broad plate, which is placed flatly upon the external surface of the upper lid. The other blade ends in a transverse, smooth gold clasp, about 1.5 millimetres wide and 14 millimetres long. This is passed beneath the mucous membrane of the lid. The blades are then fastened together in this position by means of a spring. As the plate is broader than the clasp by eight or nine millimetres, the free edge of the plate furnishes a transverse line of support, around which the lid turns over or becomes everted, while the other end of the forceps is forced upward toward the upper orbital margin. This exposes a large extent of the mucous surface of the lid, and to a certain extent the mucous membrane covering the eyeball, and admits of the employment of free cauterization.

The Treatment of Dislocated Cataracts.—Galezowski ("Rec. d'ophthal.," May, 1888) from his experience draws the following conclusions: 1. Subluxated and luxated cataracts form a variety of complicated cataracts which should be operated upon with the least possible delay in order to prevent the occurrence of consequent inflammatory symptoms. 2. The method of operating which is to be preferred to all others is the extraction by making a simple flap without iridectomy. 3. The section should be made upward, of medium length, and somewhat away from the corneal margin. 4. The curette or spoon used in extracting the dislocated lens should be relatively large and deeply hollowed.

Blennorrhagic or Gonorrhœal Iritis.—Despagnet (*ibid.*) reports two cases of this rather rare form of iritis, and makes the following remarks: Gonorrhœal iritis is a tolerably rare disease, and is generally preceded by an arthritis, usually of the knee, though it may occur in any articulation. The iritis may precede the arthritis by several days. There are some very rare cases in which the arthritis is entirely absent. Despagnet has seen three such attacks of iritis in the same patient without any arthritic complication. The first attack was accompanied by hypopyon, and the second by gelatinous exudation in the anterior chamber.

Carbolized Spray in the Treatment of Diseases of the Eyelids.—Sédan (*ibid.*) advises the use of carbolized spray, which he has found particularly beneficial in the treatment of conjunctival granulations. The solution he employs for all affections of the lids consists of a decoction of 25 grammes of coca-leaves in 258 grammes of filtered water, to which is added 1 gramme of carbolic acid. The apparatus he employs is the ordinary vaporizer sold by perfumers. The spray is used at a lukewarm temperature for five or six minutes every half-hour.

The Relation of Myopia to Astigmatism.—Chavel (*ibid.*), in a preliminary paper upon this subject, has determined to his own satisfaction that there is no constant relation between the inclination of the astigmatic meridians and the situation of the crescent of chorioidal atrophy met with in myopic eyes, and that the dimensions of this crescent have absolutely no connection with the existing degree of astigmatism.

Periometry and Chromatopsia.—Gillet de Grandmont ("Arch. d'ophthal.," May-June, 1888) describes a perimeter of his own invention, which he uses in his investigations, as follows: It has four arms, which form two semicircles of about thirty centimetres radius. The eye of the patient being placed, by means of a head-rest, at the center of this circumference, is thus placed at an equal distance from the point of fixation indicated by a white button situated at the point of decussation of the arms, and from their four extremities. These perimetric arcs rotate round a horizontal axis, and thus may occupy all the meridians of a sphere. The registering apparatus is connected with the arcs by means of a crank, which moves a parallelogram. Whenever the arcs incline, the crank and the parallelogram cause the plate on which the peripheral field is to be inscribed to rotate the same number of degrees. In this manner the scheme or cartoon presents its different diameters successively to the dry points which perforate it. We thus obtain a distinctly defined figure upon the card-board. On each of the arcs is an index or traveler, which moves from the point of fixation to the free end of the arc. These travelers are moved by wires which are separately rolled each upon its own drum, the rotation of which is controlled by a winch. When this is turned, all the travelers advance together, but each drum and each index may be stopped by pressing the finger upon a little key-board of four keys, appropriately marked right, left, up, or down. The head-rest may be detached from the perimeter, placed upon any tripod-stand, and employed in various ophthalmological investigations in which it is necessary to hold the head immovable. The measuring of the chromatic peripheral field, or the extent of the visual field for colors, presents some difficulties, due to the luminous impression which precedes the sensation of color. To obtain a polychromatic field, we place upon the indices colors different from each other, and which the patient has not previously seen. The travelers are then advanced by means of a crank until the patient has named each of the colors which they carry. This is repeated four times, changing the colors each time on each index, and thus the field for the different colors is marked out. This must be done rather rapidly, as

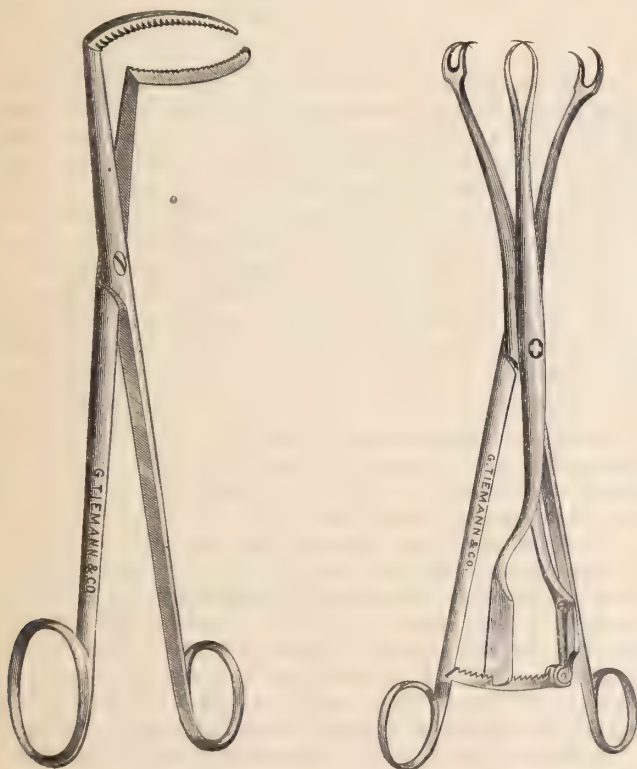
the retina soon loses its sensitiveness for colored luminous impressions. The author's registering chromatoptometer consists of a revolving disc carrying the following ten colors: violet, ultramarine blue, dark green, light green, light yellow, dark yellow, orange, carmine, lake red, and white. These colored surfaces are two centimetres square. A lid or diaphragm, descending by means of a toothed rack along the diagonal of the parallelogram, uncovers successively a square of variable extent, of which the size is indicated by a sliding-gauge. As this diaphragm descends, it carries with it a dry point which registers as it stops on the scheme or card which has been introduced into the apparatus. Thus the value of central chromatic vision is completely established.

New Inventions, etc.

SERRATED SCISSORS AND COMPOUND TENACULUM FOR AMPUTATION OF THE CERVIX UTERI, AND FOR THE REMOVAL OF PEDUNCULATED AND SESSILE TUMORS FROM THE CERVIX.

By WILLIAM H. WATHEN, M.D.,
LOUISVILLE.

I DEvised these instruments in the fall of 1877, and have used them since in amputations of the cervix uteri and for the removal of tumors from the cervix. It will be observed that the scissors is made after the fashion of an ordinary scissors, bent at right angles on the flat, with the blades slightly curved on the edge and finely and sharply serrated. It cuts by a rotary motion; and an indurated cervix, or a hard fibroid tumor with a base two inches in diameter, may be removed by



it in a few minutes, with no more hæmorrhage than usually follows the use of the écraseur. It affords the best and the safest means to perform these operations, and in amputations of the cervix, the mucous membrane of the intra-cervical and the extra-cervical tissues may be brought together and will leave no open wound to absorb septic matter, or to heal by granulations, and probably cause cicatricial contraction of the canal such as often follows amputations by the écraseur or the

galvano-cautery. This scissors has recently been much improved by Messrs. Tiemann & Co., and has been made more powerful and more aseptic. But it is necessary to have a strong double tenaculum forceps, so that the cervix or tumor may be held steady while being removed by the rotary or sawing motion of the scissors. I have improved the ordinary tenaculum by combining with it another, to be introduced into the os in amputations of the cervix and fastened into the tissue of the cervical canal. By this means we may remove a cone-shaped piece by pulling down the intra-cervical tissue before introducing the outer teeth of the tenaculum into the vaginal mucous membrane of the cervix; and by pulling gently on the tenaculum during the process of amputation, the excavation into the uterus will thereby be increased. There is no necessity of dividing the mucous membrane high up, and therefore the danger of cutting into the peritonæum is relatively less. With this scissors and tenaculum the excision may be performed without risk of wounding any part of the vagina. The tenaculum, as manufactured by Messrs. Tiemann & Co., can be immediately separated into its four parts, so as to be perfectly cleansed and made aseptic.

Miscellany.

Quack Advertisements in Religious Newspapers.—When a wrong is assailed in general terms, the assault is apt to be interesting to those who participate in it, and perhaps to those who witness it; but there is some danger that it may not accomplish very much. This truth is illustrated by the results which have so far followed the attempts of various medical journals in this country to abate the evil of quack advertisements in religious newspapers. These attempts have been approved and applauded by medical men, and those who made them knew they were discharging a useful office. But the religious newspapers have not been cured; and, indeed, they do not seem to have improved materially.

One of the reasons for this is, no doubt, the fact that the attack has not been sufficiently sharp on any portion of the line to break it, and that, while the whole religious press bore the brunt of the assault, no one part experienced any special inconvenience from it.

What is now needed, we believe, is that the force of public opinion should be concentrated upon conspicuous offenders, and that an attempt should be made to compel them to regard the principles of honor and decency which they have so long violated. This is a method which is far from pleasant, but it is our honest opinion that no kindlier one will effect the object.

That our readers may understand why we say this, we inform them that we took the trouble to send our editorial of December 31, 1887—which we intended to be temperate, though plain-spoken—to the editor of almost every religious paper in the United States, and that by personal correspondence we have endeavored to enlist the self-respecting religious papers on the side of right in this matter. Some good has been accomplished. A few of the religious papers have expressed themselves as we hoped they would. More than this, a number of our medical contemporaries have added their efforts to ours, while the Medical Society of the State of Arkansas has issued a series of resolutions against the evil of false and misleading advertisements in religious newspapers, and these resolutions have been approved and indorsed by the American Medical Association.

We were glad to note, also, in the "Reporter," June 9, 1888, that a representative religious body—the General Assembly of the Presbyterian Church—at its last meeting, in Philadelphia, received and, we believe, indorsed an overture of a like character.

This much is cause for thankfulness. But much more remains to be done. How much, may be judged from the fact that, in spite of all we have said, one of the most influential Presbyterian papers in the land persistently continues to publish advertisements which any man of common sense would know to be absolutely and unblushingly false. In a recent issue of this paper there were no less than seven advertisements which deserve to be characterized in this way, including sure

cures for deafness, cancer, fits, and consumption! And the difficulty of dealing with cases of this kind may be estimated when we state that the editor of the "Reporter" has made a special attempt, by writing personally to the editor, who is also the owner, of the paper referred to, to induce him to correct the wrong he was committing.

Another illustration is furnished by one of the representative papers of the Methodist Church—a paper which is, we believe, directly governed by the ruling body of that church. The "St. Joseph Medical Herald," in May, 1888, speaking on this subject, says that this paper "sells the columns which should be filled with religious matter to the vilest impostors and most indecent advertisements of which the country can boast." This is strong language; but it is fully warranted by the circumstances.

We appreciate the good work done by religious papers, and it is for this reason that we wish to see them freed from a reproach which interferes with their usefulness and injures the cause of religion. We have tried to bring this about in a way which should not give needless offense. But, as we believe that no reform is ever accomplished without somebody being hurt, we shall not hesitate, when next we take this subject up, to lay our hands on particular religious papers and say plainly to the editor of each: "Thou art the man!"

We do not now take this step, because we hope that some to whom this charge would apply to-day will clear themselves before the time arrives to make it.

We beg our medical contemporaries to join their efforts to ours to cure this evil as gently as may be possible, but with all the firmness that may be necessary; and we beg our religious contemporaries to make our cause their own, so that we may seem rather to offer counsel to those who wish to know what is right than to formulate censure against those who choose to do what is wrong. Physicians and the clergy are usually sympathetic with, and helpful to, each other; and it would be a pity if the religious papers were to maintain an attitude which invites the distrust and—it must be said—the contempt of those who should be their best friends.—*Medical and Surgical Reporter, August 18, 1888.*

The Congress of American Physicians and Surgeons.—The following circular has been issued:

"WASHINGTON, D. C., August 27, 1888.

"MY DEAR DOCTOR: In view of the fact that frequent inquiries are made of the Committee of Arrangements by medical men and others in regard to the character of the organization now known as the Congress of American Physicians and Surgeons, which will hold its first triennial session in Washington, September 18th, 19th, and 20th, it may be proper to state that several years ago the American Surgical Association passed a series of resolutions declaring it expedient that the special medical societies in this country should adopt some plan of organization by which they should be brought together at certain stated periods, and invited the other societies to co-operate with it in perfecting such a scheme. This invitation was accepted by the several societies, and in October, 1887, a committee of conference, composed of delegates from each of the societies, assembled in this city and agreed upon a plan of association, which was subsequently considered and accepted by the societies constituting the Congress as now organized. This plan consists simply of the agreement that the medical societies named shall hold their usual annual meetings at the same time in this city every third year, and that an executive committee, composed of one member of each society accepting the agreement, shall arrange for one or more general meetings for the consideration of such medical subjects by such physicians and surgeons as it may select, to be followed by such general discussion as time may permit. The present Executive Committee is also charged with the duty of devising and submitting a plan of permanent organization, which will be considered at a preliminary meeting on Tuesday morning, September 18th. There is no membership in the Congress proper. Membership belongs exclusively to the several societies constituting the Congress. Each society prescribes its rules for admission of candidates, and transacts its business according to its own method. The Congress, as such, does not in any manner interfere with the autonomy of the several constituent societies.

"The guests are men of distinction in some special department of

medical science, who have been invited by some one of the constituent societies to attend its meetings, and perhaps to present a paper on some chosen subject. They are guests of a society, not of individual members. The Committee of Arrangements has not claimed or exercised the privilege of naming guests, nor has it conceded the privilege to individual members. At its suggestion, the Executive Committee has invited the heads of the government bureaus of medicine, the president of the last International Congress, and several citizens to whom it was indebted for courtesies. In the event there should be present from abroad any medical man who may not have been specially invited, the Committee will hold itself bound by ordinary courtesy to include him in the list of guests.

"The meetings of the Congress and of the societies will be open to the profession. Any medical man who may choose to attend has the privilege of doing so; but the privilege of taking part in the discussions will be limited to the members, guests, and those who may be invited to do so by the societies respectively. The invitation to attend the meetings and engage in discussion will not, however, entitle one to the privileges of a guest.

"Members and visitors must avail themselves of the ordinary excursion rates of railroad fare.

"The postmaster of this city has arranged facilities for the distribution of the mail at the office of registration, in Willard's Hotel. Letters must be addressed to 'The Congress of American Physicians and Surgeons.'

"It may be added that the Committee of Arrangements declines to make any provision for, or to have anything to do with, any exhibit of pharmaceutical preparations and medical and surgical appliances.

"I assume the responsibility of making the foregoing statement for the information of those concerned, and to avoid confusion and misunderstanding. And it gives me great pleasure to announce that the meeting in every aspect promises to be a conspicuous success.

"Yours truly,

"SAMUEL C. BUSEY, M. D.,

"Chairman Committee of Arrangements."

Creolin and Bacillus Pyocyaneus.—"Dr. Klamann, writing in the 'Allgemeine medicinische Central-Zeitung' on Creolin Dressings," says the "Lancet," "gives some cases in which *Bacillus pyocyaneus* was found in the dressings, and cultivations of it obtained. This, however, did not appear to interfere with the healing of the wounds, but Dr. Klamann says that he never found this organism when gauze impregnated with corrosive sublimate or carbolized cotton-wool were used. He remarks that when a creolin lotion containing more than 2 per cent. is used for moistening the dressings they become unbearable from the pain produced. Latterly he has confined himself to dry creolin dressings, and is well satisfied with the results obtained. In case of burns he uses creolin oil of the strength of 1 per cent., and finds that this acts exceedingly well."

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 24th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 4th corresponded to an annual rate of 16 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 9, and the highest in Manchester, viz., 21.9 in a thousand. Small-pox caused 2 deaths in Preston, 1 in Oldham, 1 in Sheffield, and 1 in Hull. Diphtheria caused 3 deaths in Manchester.

London.—One thousand three hundred and nine deaths were registered during the week, including measles, 29; scarlet fever, 18; diphtheria, 19; whooping-cough, 25; enteric fever, 9; diarrhoea and dysentery, 121; simple cholera and choleraic diarrhoea, 4. Diseases of the respiratory organs caused 167 deaths; different forms of violence, 49; and 6 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.9 in a thousand. In greater London 1,598 deaths were registered, corresponding to an annual rate of 15 in a thousand of the population. In the "outer ring" 9 deaths

from whooping-cough, 16 from diarrhoea, 5 from diphtheria, and 5 from measles were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending August 4th in the sixteen principal town districts of Ireland was 18.2 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 0, and the highest in Kilkenny, viz., 29.6 in a thousand. In Dublin 143 deaths were registered, including whooping-cough, 11; enteric fever, 4; scarlet fever, 3; and diarrhoea, 1.

Scotland.—The deaths registered in eight principal towns during the week ending August 4th corresponded to an annual rate of 15.9 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Perth, viz., 6.4, and the highest in Aberdeen, viz., 18.7 in a thousand. The aggregate number of deaths registered from all causes was 402, including measles, 3; scarlet fever, 3; diphtheria, 2; whooping-cough, 5; fever, 3; and diarrhoea, 22.

Marseilles, France.—Eight hundred and ninety deaths were registered during the month of July, 1888, including sporadic cholera, 1; small-pox, 9; enteric fever, 37; scarlet fever, 1; diphtheria and croup, 28; and measles, 45. The consul stated in his report, dated August 6th: "The health of the city is remarkably good for mid-summer. The one case of sporadic cholera is only an ordinary event here."

Catania, Italy.—Four hundred and thirty-eight deaths were registered for the month of June, 1888, including small-pox, 77, and enteric fever, 10.

Ceara, Brazil.—One hundred and thirty-four deaths were registered for the month of June, 1888, including 2 from yellow fever.

Montevideo.—Four hundred and thirty-nine deaths were registered during the month of June, 1888, including 79 from small-pox.

Malta and Goza.—Three hundred and seventy deaths were registered during the month of June, 1888, including measles, 2; whooping-cough, 7; diphtheria, 1; enteric fever, 1; dysentery, 4.

Hong-Kong, China.—In response to a cablegram from the Department of State, "Does cholera exist in Hong-Kong?" the consul replied as follows, under date of August 15th: "No cholera, Hong-Kong."

Havana, Cuba.—Twenty-six deaths from yellow fever are reported for the week ending August 10th.

Cairo, Egypt.—The consul-general, in his dispatch dated July 23, 1888, states that "on the night of the 15th of June a heat-wave spread itself over Egypt, and it has since remained continuously. In a residence of three summers here I have experienced nothing comparable to it. The days have given air like that from the blast of a fiery furnace, while the nights have been intolerable from heat. The death-rate throughout Egypt, which was already very high, suddenly mounted toward figures of decimation, and the destroyer has been reaping a great harvest of the dead. For the first week of this very hot weather the death-rate rose in Cairo from a little over 40 to 76.8. The next week it was 71.6, the next 79.1, succeeded for the fourth week by 77.7. These figures present the average. In Bodlac and Darb-el-Ahmar, two quarters of the city, the death-rate was respectively 103 and 86.5, in one case more than decimation, in the other very nearly decimation. Truly no Indian death-rate, except in periods of wide-spread and most fatal epidemics, reaches the present record in the Egyptian capital.

"For five years past the health of Cairo has been growing worse, and yet during these years a special detail of English sanitary experts has been supervising a Khedival sanitary department, the main object of which has been to look after the health of the most crowded Egyptian communities. The sanitary administration costs the Egyptian Government annually about \$200,000, not inclusive of publications and police service. The health of the large cities grows worse every year. The heavy summer death-rate begins earlier in Cairo than in Alexandria. Just now a decidedly increased mortality is prevalent in the latter, and, following precedent, it will be much greater in August. Last year the death-rate at one time in Alexandria was about equal to what it now is in Cairo. In some of the smaller cities the mortality has this year been greater even than the Cairo average, and about Damietta there has been typhus fever of a very fatal character. The rise of the Nile produces great humidity, and during August, September, and October no abatement of sickness may be hoped for. By the 1st of November

a pleasing change comes, and from then until in the spring the temperature will be mild, the climate delightful, and health, for Egyptians, fairly good. It is gratifying, even under this burning sun and in hearing of these never-ending songs of death, to know that a season will come against which but few if any complaints may be entered."

July 25th: "The average death-rate for the week ending July 19th, as shown in the health bulletin, reaches 97.2, while in Darb-el-Ahmer quarter it amounted to 126, and in Bodlac quarter to 100. Total deaths in this city were 685.

"The average maximum temperature for the same week was 106.5° F.; extreme heat, 114.5°. The average minimum temperature was 72.3°; the extreme minimum, 72.2°. The observations are taken at the Khedival Observatory, at Abbaseieh, two miles north of Cairo, where the unobstructed sea-breezes produce a lower temperature than in the city or south of it. Were it not for the great relief in temperature at night, existence would be unendurable."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated popu- lation.	Total deaths from all causes.	DEATHS FROM—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping- cough.
Paris	August 4.	2,260,945	781			1		7	2	27	30	4
Glasgow	August 4.	545,678	184					3	1	1		
Warsaw	July 28.	444,814	220			13			7	3		
Calcutta	July 7.	433,219	163	10		1						
Amsterdam	August 4.	389,916	127							1		
Rome	June 23.	300,467	204					6		4		
Rome	June 30.	300,467	213					3		2		
Copenhagen.	July 31.	300,000	118						3	3		
Munich	July 28.	275,000	172					1	6	5		
Palermo	August 4.	250,000	82						2	1		
Belfast	August 4.	227,022	87						3	1		
Genoa	August 4.	179,623	85							1		
Stuttgart.	August 4.	125,510	31			1				2		
Bremen	July 28.	122,000	35									
Havre	July 28.	112,074	70									
Havre.	August 4.	112,074	70			2		10	3			
Pernambuco	July 17.	110,000	84			1						
Pernambuco	July 24.	110,000	92				1	3				
Pernambuco	July 31.	110,000	92				1	1	1			
Barmen.	August 4.	109,000	36				1		1			
Leghorn	August 5.	94,423	35									
Cadiz.	August 4.	65,028	37									
Guayaquil	July 15.	30,000	49									
Curacao	July 28.	25,000	6		3	1		1				
Vera Cruz	August 9.	23,800	19									
Gibraltar.	July 29.	23,631	14						1			
Kingston, Can	Aug. 18.	16,216										
Antigua	July 29.	15,347	18									
Sagua la Grande.	August 4.	15,605	17		2							
Cartagena, Cola.	July 28.	13,000	10									
Matamoros	August 4.	12,000	10									
Laguayra	July 28.	7,428	2									
San Juan del Norte.	July 9.	780	1									

UNITED STATES.

Ship Island Quarantine Station.—The medical officer in charge reports the arrival, August 13th, of the American barkentine Joe Read, from Havana via Apalachicola, Fla. "Her bill of health was foul, and her steward was left sick in Havana, with 'symptoms of yellow fever,' about four hours before she left that port."

Brownsville, Tex.—The Secretary of the Treasury received a telegram from the collector of customs, Brownsville, Tex., as follows:

August 14th: "State health officer proclaimed quarantine against Matamoros yesterday, on account of arrival of cargo and passengers direct from Vera Cruz. No sickness known to be among passengers or on vessel. Customs officers at Brownsville, Santa Maria, and Brazos have been instructed to assist State officers."

Cape Charles Quarantine Station.—Acting Assistant Surgeon Clark son telegraphed:

August 18th: "Sick seaman on steamship Athens, died same day (August 17th). Diagnosis not positive. No others sick. Will use every precaution. The vessel is now in quarantine."

Orlando and Sanford, Fla.—The mayor of Orlando and the mayor of Sanford telegraphed, August 18th, "there is no yellow fever in Orlando and Sanford or Orange County," and asked investigation, as their mails are threatened to be cut off.

Manatee, Fla.—Surgeon Murray telegraphed:

August 18th: "Manatee—total, 25 cases; none since 11th. Village fumigated, and bedding cleaned. Palmetto—1 case 15th; for 16th, 2;

17th, 2. No connection with Manatee cases. Restrictive measures adopted."

Tampa, Fla.—Dr. J. P. Wall telegraphed:

August 18th: "Only 1 mild case since last report. Eleven cases in all, in 8 of which diagnosis positive. Three deaths with black-vomit. Another fever, probably mild dengue, here. Only 1 case of yellow fever under treatment."

August 20th: "Outlook better."

Jacksonville, Fla.—Dr. Neal Mitchell telegraphed:

August 17th: "Official bulletin for 24 hours ending 6 P. M.—New cases, 4—total number of cases to date, 32; total number of deaths to date, 4."

August 18th: "Official bulletin for 24 hours ending 6 P. M.—New case, 1; death, 1; recovered, 2; under treatment, 18—total number of cases to date, 33; total number of deaths to date, 5. Fever assuming a more severe type."

August 19th: "Official bulletin for 24 hours ending 6 P. M.—New cases, 5, one being an African; death, 1; under treatment, 22. Number of cases to date, 38; total number of deaths to date, 6."

August 23d: "Official bulletin for 24 hours ending 6 P. M.—New cases, 16; deaths, 2; recoveries, 2; under treatment, 43. Total number of cases to date, 70; total number of deaths to date, 10."

August 24th: "Official bulletin for 24 hours ending 6 P. M.—New cases, 14; deaths, 2; recoveries, 1; under treatment, 54. Total number of cases to date, 84; total number of deaths to date, 12."

Other Places in Florida.—A sanitary inspection is now being conducted under the direction of this Bureau, with a view of obtaining definite information from other places in Florida, and removing, if possible, restrictions from places not infected.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Variceloid.	Varicella.	Typhus fever.	Enteric fever.	Sarlet fever.	Diphtheria.	Whooping-cough.
New York, N. Y.	August 18.	1,532,060	802						8.	8	40	13	24
Chicago, Ill.	August 18.	800,000	339						9.	9	8	4	
Brooklyn, N. Y.	August 11.	793,960	366	2					3	1	17	4	
Baltimore, Md.	August 18.	431,879	224						1.	1		5	
Boston, Mass.	August 18.	415,000	98						2	1	7	3	
San Francisco, Cal.	August 10.	300,000	109						2.	3			
New Orleans, La.	August 11.	248,000	136						1	1	11		
Buffalo, N. Y.	August 11.	230,000	135		1				1	1	3		
Buffalo, N. Y.	August 18.	230,000	96						6	1	4	1	3
Pittsburgh, Pa.	August 18.	230,000	110						4.				2
Washington, D.C.	August 18.	225,000	140							4.			2
Cleveland, Ohio.	July 21.	225,000	151						3	1	3	1	2
Cleveland, Ohio.	July 28.	225,000	60						4.				
Louisville, Ky.	August 18.	200,000	78							1.			
Milwaukee, Wis.	August 18.	195,000	59						11.				
Kansas City, Mo.	August 18.	180,000	79						1.	1			
Minneapolis, Minn.	August 17.	180,000	49						2.	1	1		
St. Paul, Minn.	August 18.	175,000	68						2.				
Rochester, N. Y.	August 18.	130,000	98						1	1	1		
Detroit, Mich.	August 18.	116,340	51						1.				
Richmond, Va.	August 11.	100,000	33						6.	4			
Denver, Col.	August 17.	96,000	33						6.			1	
Columbus, Ohio.	August 18.	93,000	32						3.				
New Haven, Conn.	August 18.	82,000	21						3.				
Toledo, Ohio.	August 18.	80,000	24						2.				
Nashville, Tenn.	August 18.	65,153	36						1.	2		2	
Fall River, Mass.	August 18.	65,000	26						1.				
Cambridge, Mass.	August 18.	64,079	50						1.			1	
Charleston, S. C.	August 18.	60,145	20						1.				
Evansville, Ind.	August 16.	53,000	22						1.				
Lynn, Mass.	August 18.	50,000	16						1.	2			
Oakland, Cal.	August 11.	50,000	23										
Manchester, N. H.	August 18.	41,000	11									1	
Galveston, Texas.	August 10.	40,000	16										
Mobile, Ala.	August 18.	40,000	5										
E. Saginaw, Mich.	August 20.	34,000	8										
Burlington, Ia.	August 15.	30,166	10								2		
Davenport, Ia.	August 20.	30,084	11										
Altoona, Pa.	August 11.	29,546	14										
Salem, Mass.	August 18.	29,000	8										
Yonkers, N. Y.	August 18.	27,500	25										
New Bedford, Mass.	August 18.	28,845	9										
Auburn, N. Y.	August 18.	26,000	11										
Haverhill, Mass.	August 18.	25,000	16								3		
Jackson, Mich.	August 8.	22,500	5									1	
Newport, R. I.	August 16.	20,466											

Myopia.—According to the "Lancet," "a very sensible decree has just been issued by the Austrian Minister of Public Instruction, forbidding the use of books printed with small type in public schools, as short-

sightedness is so prevalent among school-children in Austria. Scientific supervision might very properly be given to school-books in this country, attention being especially directed to the size of the type, length of line, and spacing of letters and lines. In the works published by the 'Clarendon Press' no fault can be found in these respects, and, speaking generally, the school-books of this country are well printed. The chief fault in German books is their adherence to the very dazzling Old English shape of the letters, which certainly severely tries the eyes by necessitating very close attention, and the evil effects of this is aided by the paper being coarse and by the light supplied being usually insufficient."

ANSWERS TO CORRESPONDENTS.

No. 223.—Twenty-two grains of salicylic acid and eight grains of prepared chalk are mixed and divided into six powders (of five grains each) or ten powders (of three grains each). One to be given every two to four hours. In a private communication the author states that he has found them of avail only in the non-inflammatory serous diarrhoeas of infants. For further particulars, see the "Proceedings of the Medical Society of the County of Kings," September, 1880, page 223.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE IMMEDIATE REPAIR OF LACERATIONS OF THE CERVIX AND PERINÆUM.*

By ARTHUR B. TOWNSHEND, M. D.,

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EACH of the several specialties has certain fields wherein the lines between it and some of the other specialties can only indefinitely be drawn; and of these none are less clearly so drawn than those between obstetrics and gynecology. Therefore, by entering a region where these two so intimately blend that an arbitrary limit by time is the only one, it is hoped to interest more than by following one of the more clearly defined and strictly gynecological problems. Two of the injuries that may take place at childbirth may, I hope, be profitably discussed. It is not the object to discuss the rare injuries that come forward more as curiosities than matters of particular moment, but those that any of us may and probably all have seen while attending cases of confinement.

In looking over the case-books of the Woman's Hospital, one could not help being struck with the frequent occurrence of the diagnosis of lacerated cervix and perinæum—so much so as to make one seriously wonder if nearly all of the babies tore their way into the air instead of passing, as we are wont to believe, through apertures which Nature intended should be ample for their passage. Be the intention as it may, it is true that a very large proportion take the former method. That some degree of abrasion is the rule, and in the cases of primiparous women the necessity, all will admit, but there are still a very large number of practitioners, and even some who think themselves especially well versed in obstetric art, who say that they very seldom see lacerations worthy of particular attention, and so give them none, wondering where so many women who had them could have come from. These good men go on congratulating themselves on their good results as compared with those of the men who do see these lacerations, and the gynecologist reaps his (we hope to come) harvest when the patients of these men fall in his way. The men who do not see lacerations due to parturition are the men who do not look for them, or, looking blindly, do not recognize them.

No statistics of value can be given at the present day that will give even a reasonable approximation in percentages of the number of lacerations to the number of children born; but I am satisfied, from the statements, written and spoken, of authorities on these matters, and from the results of my own examinations in dispensary and private practice, that the ratio is a vastly greater one than ever enters the mind of the general practitioner, even though obstetrics occupy much of his time.

If it should be said to be one half, or one third, or one quarter, by calling it in question you would undoubtedly have the advantage in that one could produce no proof—at

east, perhaps, none you would admit; but at the latter figure one might rest, knowing that you could not safely contradict him. It is probable that lacerations of the cervix uteri occur more frequently than those of the perinæum, and also are much less frequently noted at the time, for it has been my fortune to see comparatively very few cervices of women who had borne children in which that fact was not perfectly apparent without information on their part.

That all of these were of considerable or sufficient extent to need operative interference is not meant, but it is meant that a very large number were such, and certainly a larger number than the one fourth mentioned would in no wise answer the ordinary text-book description of a cervix with a small oval opening of the cervical canal. In many of the cases, too, in which such a description would seem to be near the truth, a careful examination will reveal the presence of a scar running for some distance into the cervical tissue, and the finger will recognize the familiar cicatricial line—the finger being by far the safer guide, for even though, by an ocular examination, there is seen as perfect and shapely a cervix and os as any plate can depict, the tear in the cervical tissue may have not united to any degree, and a large plug of hardened scar-tissue may fill the gap, with the mucous membrane so nicely covering Nature's bad result as to perfectly deceive until the finger detects the error, and this will be verified when a section is made in the operation for its removal.

Of the causes which, singly or in combination, lead to tearing of the cervix, except perhaps by enumerating some of them, it is not the purpose here to speak: for, whether from undue size of the head, faulty presentation, too rapid dilatation, the use of forceps, the presence of cicatrices from previous tears, etc., the engendered condition is the same, and its conduct can be considered without reference to its cause; neither will the many conjectures and much-talked-of ways of possibly preventing all or any part of these causes need mention here.

It very often happens that we are made aware of the laceration in the cervix while the head of the child is forcing an exit through it; in some cases, before there is a tear, one may be very sure there will be one, and possibly may make out its probable location, to be confirmed after delivery.

As quickly as may be after the delivery a careful examination should be made of the margin of the os with the finger, and one can easily satisfy himself of the location and probable extent of any laceration or lacerations. This is especially necessary when there is bleeding not to be accounted for by other causes, as it is not unlikely that a vessel of sufficient size to cause very considerable loss of blood may be torn while time is being wasted with ergot and efforts to excite uterine contraction. This most often happens when an old cicatrix is torn across and the mouth of the vessel fails to contract in the hardened tissue.

Pressure with the finger at the base of the tear, if possible from the inside toward some firm portion of the pelvis, may often cause the stoppage of the hæmorrhage, and once stopped, it seldom starts again. The injection of very hot water, perhaps with the idea of arresting hæmorrhage

* Read before the Hospital Graduates' Club, March 17, 1887.

higher up, no doubt often checks that from the cervix as well, without our definite knowledge of it. It is presumptive evidence, however, when a uterus is firmly contracted and we can distinctly feel an extensive laceration, that there is need of examining further and more carefully at its bottom if the bleeding is still taking place. It is seldom, fortunately, that bleeding to an alarming extent will occur; however, if there be any, it will be much better to examine immediately with a speculum, and, if its source be found, proceed to arrest it.

If the necessary appliances are to be had—and there is seldom such stress of time as to make their procurement impracticable—by far the better method is by means of the suture, silver or catgut, and to close the tear completely at the same time. If these are not to be had, a light tampon with a pad of styptic cotton should be employed, after the bleeding has been controlled by pressure.

Some members of the profession strongly advocate the immediate suture of all lacerations of the cervix by silver wire, and claim very beneficial results. It is not the custom of by far the larger portion of obstetricians, even when possessed of gynaecological skill, nor do I believe it ever will be. A far better time for this is when the patient has recovered from the effects of the labor; when repair is certain and easy, since repair at the time of labor in the kind of tissue dealt with must be both difficult and uncertain. A large proportion of the lacerated cervixes that come under observation at periods of some length subsequent to the time of injury are found to have suffered loss of tissue from sloughing, caused by pressure between the head of the child and the harder portions of the pelvis. It is also more than likely, in many cases where the tear at the time of labor would seem small, that sloughing takes place to an extent that leaves the cervix in a worse condition than would result in other cases from a far greater but a cleaner tear. The labors in which lacerations of the cervix have taken place are, other things being equal, those in which the mother is put under the greatest strain from exhausting efforts to force open an unyielding os, and in many cases the loss of blood will have added to that strain upon her about all that she could bear. An operation will necessarily add another and considerable element to that strain, which of itself would in most cases be sufficient to deter the careful man from taking the chance. Again, taking into consideration the necessary pain inflicted if the operation be done without an anæsthetic, or the further element, though perhaps small, of the depressing effect of one, as one must needs be given if the perinæum be torn and sensitive at the same time, these several reasons seem to me to fully fortify the position taken against the immediate operation, and it is difficult to see how any of these conditions can ever be so changed as to warrant the procedure, except in the very limited number of instances before mentioned.

If one sees a number of these cases he can not help being struck with the fact that Nature tries to be very kind to a torn and bruised cervix, and will often be surprised in seeing a pretty well preserved organ where the only thing in his mind's eye was a sadly distorted relic. Then, if she

has not been able to accomplish all you desire in her first effort, give her another opportunity by doing a careful operation before the time when the long list of often very curious reflex symptoms shall have established themselves, and an irritated and discouraged nervous system has been broken under the strain. This will accomplish with very slight risk what you would have been very unlikely to have accomplished at all with considerable risk.

After so much of what should not be done, a few words will suffice for what should be done. In the after-treatment of injuries from labor is one of the places where antiseptics shines most conspicuously, not, however, by the use of any particular germicide, or even of any, but antiseptics in its broader and better sense of the utmost cleanliness. Given the most perfect conditions to start with, we still have here a state of affairs offering the most beautiful breeding-ground for the things we know only enough about to thoroughly fear, and as yet to attempt in these cases imperfectly to prevent their development—a partially closed cavity constantly filled with disintegrating tissue, and often the resultants of sloughing as well. The vaginal douche offers the means of preventing sepsis, and too much care can not be enforced to make this thorough and frequently repeated, and for extra safety to contain some one of the accepted antiseptics. It should be given at least twice daily, forcing with moderate strength a continuous stream of water at a temperature as hot as may be borne during ten minutes' time. When symptoms of septic infection develop, increase the frequency to one douche every two or three hours, or even every hour if need be, forcing the water to the fundus of the uterus.

In the discussion of puerperal septicæmia very little stress is ordinarily put upon the part a lacerated cervix may play in the matter, and existing trouble is all referred to absorption taking place in the fundus. That this view is sometimes inaccurate is made manifest by the fact that simple vaginal injections will promptly reduce the temperature in a great many cases in which the internal os is so small as to preclude the entrance of any amount of the injected fluid.

Naturally, in cases in which absorption is taking place higher up, the cervix will be equally well cleansed at the time by the intra-uterine douche, and a regard for safety will indicate that this be employed. The result most to be feared in extensive lacerations of the cervix is not a septicæmia endangering life, but a sufficient absorption, in connection with the mechanical violence, to produce extensive cellulitis in the uterine supports and appendages, chiefly in the broad ligaments, and thus to render convalescence painful and tedious.

Too much stress can not be laid on the necessity for keeping patients with such lacerations in bed until this condition has passed; as a month, or even two, lost at this time, counts for nothing as against the years of suffering from chronic cellulitis, should that unhappy process be allowed to assert itself. In the acute stage, complete rest and the use of hot water will in a few weeks produce results which can only be attained in a greater number of months if any mistake in this regard should be made.

Important as the care of lacerations of the cervix may be under some circumstances to the obstetrician, and interesting as they are to the gynaecologist at a later period, it is when lacerations of the perinaeum occur that the attendant to the lying-in chamber must combine these two offices and put into practice sufficient of operative gynaecology to render the aid of that specialist for its further after-treatment unnecessary. In other words, the problem is one of simple surgical restoration of parts injured, and the obstetrician's work has ended for the gynaecologist's to immediately begin.

That a laceration of the cervix might be overlooked, or, if looked for hurriedly, should not be seen amidst the excitement of the lying-in chamber, is not strange, and after the conclusions drawn it may be forgiven, but not so in regard to the laceration of the perinaeum.

Here the condition of affairs in some most important particular is very materially changed, and it can be easily shown that the conclusion from these conditions must be changed also. The most cursory examination reveals the condition of the perinaeum, and, without loss of time and with the minimum of pain to the patient, the nature of its tear, if it be so unfortunate as to have one, may be precisely made out. Under the best light to be obtained, separate the limbs widely, open the labia carefully, and sponge the parts clean. If you have previously given an anaesthetic, continue its administration until the matter of the necessity of employing the suture is determined. So far as the question of immediate operation is concerned, three degrees of laceration are to be considered: 1. A simple tear of the mucous membrane longitudinally at the base of the hymen and perhaps extending into the vagina and outward toward the skin for a short distance, but involving only the mucous membrane. 2. Tears involving the separation of the fascia and muscles comprising the so-called perineal body to any extent greater than that of the first degree, and not involving the sphincter ani. 3. Tears extending through the sphincter ani, and perhaps the wall of the gut. The first of these needs no treatment except the maintenance of cleanliness; it will promptly take care of itself quite as well as it can be cared for.

The reasons for operation in the second and third conditions which make it proper here and wrong in the cervix are these: The tear is clean, and very rarely does it happen that any loss of tissue takes place. The results of the operation are eminently satisfactory as to the restoration of the parts to their natural condition, and in cases of the second class the operation is easily and quickly done.

In the third class the condition is such as to make the performance of the operation imperative, even at the risk of continuing the administration of the anaesthetic, of increasing the shock, or of anything except immediate danger to the life of the woman.

There are few more vexing operations in surgery than that for the repair of a complete laceration of the perinaeum during a period far removed from the time of injury, when the sphincter ani has contracted and has become to any degree atrophied—a condition which takes place in a very short time. The great advantage of a careful closure of the tear at the time it occurs, when the ends can be easily

brought together and kept there, admits of no argument, and any man would be deserving of the severest censure who does not make every effort to attain that result.

There is at the present time an animated discussion taking place as to the nature of these tears, chiefly as to their direction and as to what tissues are torn, and upon these observations several quite different operations for the repair of the injury at a period remote from its occurrence have been devised. The problem at the time of its occurrence is, however, in most cases a very simple one, and the direction of the lines of the tear which it is necessary to coapt admits of no debate. These are by no means exactly in the median line, and may run at various angles, but in nearly all cases the tear is essentially in the axis of the vagina, and its closure is accomplished by a single line of sutures.

Although the word immediate has been constantly used in this connection, it has not been used with the idea that the closure is best accomplished immediately after the tear, but in the sense of closure before a time requiring fresh denudation of the torn surfaces. This time is one of considerable latitude, and must be governed by the conditions surrounding each case. If the tear be a simple one, and the patient be in good condition also, an anaesthetic having been given in the latter stages of labor, then by all means operate at once. In by far the greater number of cases, however, it will be found that this happy combination of circumstances does not exist, and further action had better be delayed. In the single case of hæmorrhage from a large vessel in the perinaeum is this delay precluded.

In many cases the tissues become œdematous before the tear takes place, and if sutures were introduced they would be of no avail, as they become so loosened within twenty-four hours that no coaptation can exist.

The appearance of the laceration at the time of its occurrence is always exaggerated, especially if it be of the first and second class, on account of the great distension which the parts have suffered, and the most careful examinations fail to exactly determine its depth. In a tear of the first degree, with the perinaeum so thinned that it seems but a thick band of tissue, a simple tear through the mucous membrane may make it appear as though nearly severed. In a day or two afterward, when the perinaeum has regained its tone, the simple character of the tear is shown, and a useless operation has been avoided.

Furthermore, for the same reason mentioned in the case of laceration of the cervix, the woman has by this time borne enough. It is, however, best always to state the necessity for further procedure, and there will then be no misgivings on the patient's part when such proceeding is subsequently carried out.

Results show that there is nothing lost by reasonable delay. On the contrary, much is to be gained, and, though differences of opinion exist at present, certainly the tendency of the best practice must be in the line indicated.

In from twenty-four to forty-eight hours' time after the confinement the swelling will usually have disappeared, and the tissues will have so far regained their tone as to make it easy to introduce the sutures and to produce perfect coaptation; should the parts yet be swollen, wait until the

swelling disappears, and the edges of the tear can be clearly made out. Especially is this desirable if the sphincter ani be involved.

If for any reason the time must be extended until granulation is taking place, and the edges begin to be encroached upon by the new mucous membrane, refresh them slightly with scissors and scrape lightly the surface of the wound. As to the choice of material for suture in any simple case, either silk or catgut will answer, but catgut is preferable; but if there be much traction, and in all cases of the third class, dependence is much more wisely placed in silver wire for the deeper sutures, and either of the others for superficial ones if they be necessary to the perfect closure of the wound.

In tears of the second degree a straight needle of about an inch and a quarter in length, used in a simple needle-holder, answers every purpose.

Beginning at the upper end of the wound, and far enough from the edge to insure a firm hold in the mucous membrane, encircle the base of the wound, if necessary, bringing the needle out at the bottom of the wound, passing it in again at the same place, and bringing it out on the opposite side. Then continue with interrupted sutures sufficiently close together to prevent the lochia from entering the line. If at the crest of the perinæum tension exists, insert one or two deeper wire sutures for additional support.

In lacerations of the third class, if the tear extend up the gut, close it to the margin of the anus by catgut sutures introduced from the rectal side, including only the mucous membrane of the rectum and sufficient underlying tissue to secure perfect coaptation. Then, through the skin outside of the torn ends of the sphincter, at a point at least half an inch from the margin of the wound, pass a straight needle, armed with silver wire, obliquely through the sphincter, including the fibers nearest the anus, upward and backward to, but not through, the rectal mucous membrane, bringing it out at a corresponding point on the opposite side. Similarly two or, if necessary, three sutures should be passed through the sphincter, each one at a point higher up the gut than the preceding, until all the fibers of the muscle are in perfect apposition. When the tear in the gut is not extensive, it is better to pass each suture around its upper end. Tighten the sutures thus inserted, and complete the operation as in the case of lacerations of the second degree. If union seems to be firm, the sutures may be removed in ten days. If doubt exists, leave them for two weeks.

The most important point in the after-treatment is in moving the bowels. It was formerly the practice to keep the bowels constipated for a period of from ten days to two weeks, and such is the course pursued at present by many. Many good operations and apparently perfectly united wounds have failed and reopened on account of the passage of scybalous masses, even though the greatest care was taken by the use of copious enemata and breaking up the masses in the rectum.

A better plan is to inject sweet oil on the day following the operation, and to let it remain, repeating this daily, at the same time giving citrate of magnesia or some other

mild cathartic in small doses, keeping the stools in a liquid condition and moving the bowels daily. As in all other operations about the rectum, this should have been most thoroughly cleaned out before the operation, and the diet following should be fluid and light. The urine should be drawn every six hours; sufficient morphine to insure perfect quiet should be given, and the administration of douches of hot carbolized water twice or thrice daily will render the after-treatment complete. If all these details be carefully and thoroughly carried out, the chances of giving relief from this most deplorable condition are excellent, and you will have the satisfaction of knowing that you have accomplished, if not a brilliant operation, a result as devoutly to be wished for as any in the domain of operative gynecology.

39 WEST THIRTY-SECOND STREET.

A CASE OF TOBACCO AMBLYOPIA.

By DAVID WEBSTER, M. D.,

NEW YORK.

E. W., twenty years of age, a native of America, a carpenter by trade, consulted Dr. Agnew and myself on the 24th of June, 1878, on account of trouble with his eyes. For the previous six months he had been subject to attacks of "foggy" vision, occurring quite frequently and lasting from three quarters of an hour to an hour. He was also troubled with shooting pains which seemed to run from his teeth up to his eyes. Four days before he had had a solution of atropine dropped into both of his eyes, and again on the afternoon of the day before. The pupils were well dilated and the tension was normal. R. V. = $\frac{20}{100}$; $\frac{2}{3}$ with + $\frac{1}{18}$. L. V. = $\frac{20}{100}$; $\frac{4}{10}$ with + $\frac{1}{6}$.

The ophthalmoscopic examination revealed slight pulsation of the retinal veins of both eyes, but no lesion of the media or fundus of either eye.

The patient stated that he had suffered from "snow-blindness" during the previous winter.

Examination with the worsteds showed that he was color-blind. When he used his left eye he called green brown; when his right eye he called it black.

Upon interrogating the patient in regard to his habits we found that, although not addicted to the use of alcoholic beverages, he had been in the habit of smoking tobacco since he was five years of age. He had also *chewed* the weed most of the time when he was not smoking. He had stopped chewing, however, about a year before, and at this time smoked only ten or twelve strong cigars during the day. So far as could be learned, his habits were otherwise good. He was a hearty eater and slept well. We could not avoid the conclusion that his amblyopia was due to tobacco poisoning, and advised him to abandon the use of the weed and to come to see us again after a certain interval, our object being to see whether simple removal of the cause of the amblyopia would be sufficient to restore good sight. Had it failed we should have resorted to the hypodermatic use of strychnine.

We did not hear from the patient again, however, until August 12, 1882, when his father called at our office to say that his son did not return "because he had recovered his vision very rapidly on giving up the use of tobacco, and had had no trouble with his eyes since."

266 MADISON AVENUE.

THE IMPORTANCE OF CAREFUL PHYSICAL EXAMINATIONS IN THE GYMNASIUM, *With a New Method of recording Sphygmographic Tracings.*

By J. GARDNER SMITH, M. D.,

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ASSOCIATION OF NEW YORK CITY.

THERE is a question connected with public health which deserves more careful consideration than it has hitherto received. Athletic exercise of various forms has become a great national institution. Whatever may be thought of its spread, and the worship of muscle, one thing is certain: that even those who are unable to sympathize with such pastimes must still accept them as established customs. Their power over the public mind must be conceded. No amount of preaching will lessen their attraction, and no amount of indiscriminate warning by medical authorities, without more particular inquiry, will ever do much to loosen their hold upon the youth of our country and of England.

Heretofore most of the published opinions regarding physical exercise (excepting, of course, the article by Dr. Sargent, of Harvard, in "Scribner's" of 1887, and a few others) have been untrustworthy for these reasons, viz.:

First, they have been the deductions of athletes who knew nothing of medicine and but little of human anatomy and physiology, or of physicians unfamiliar with athletic exercises.

Second, and of great importance, the hearts of men examined and found enlarged after prolonged muscular exertion were not examined before the exertion.

Third, due allowance was not made for the "repeated nervous excitation of the heart" during the exercise.

Fourth, careful clinical observations have not been made of the immediate and direct effect of physical exercise upon the heart and vital organs.

It is with this fact before him that the writer solicits more careful attention on the part of the medical profession to that branch of medical science known as "physical education," bearing in mind at the same time what Socrates said of the sophists: "They do not know, but think they know; I know that I do not know."

The literature of athletics, Grecian, Roman, German, and English, has been up to the present century comparatively barren of carefully studied scientific facts. Of late years, however, since it has been required of the athlete that he possess also a certain amount of cerebral development, if he is to command the respect of his fellows, bodily exercise has been studied with some profitable results. The productions of writers on gymnastics from Plato to Blaikie are worthy a review which can not be comprehended in this article. Our object here is rather to emphasize the importance of a careful physical examination of the individual before and after he enters upon a course of gymnastic training, and of clinical observation of the effect of such exercise. The human body is too important an element in American civilization to be trifled with by men unfamiliar with its anatomy and physiology. Every director of physical training ought to be able to intelligently examine the men who exercise under his direction.

The importance of a carefully recorded *physical examination* of men engaging in athletic contests is too apparent to need discussion. In all our gymnasias the opportunity of carefully and repeatedly recording the physical condition of men is available, and ought to be competently and efficiently done in every case. To accomplish the best results, a knowledge of the man's condition and a familiarity with all the various gymnastic exercises and their *physiological effects** must be prerequisites of the "trainer." From one of the ablest of modern discussions† of athleticism (by Assistant Professor Eugene L. Richards, of Yale) we quote the following as expressing the importance of a careful preliminary physical examination: "So far, according to the recollection of the writer, no regular member of a Yale crew, team, or nine, has been permanently injured by participating in a race or match. Still, it is possible that slight injury to a person having organic weakness might result in fatal difficulty. Such an issue might be avoided by the requirement that every candidate for trial should be examined by a competent physician, and, in default of procuring such a certificate of physical soundness, should be excluded from participating in athletic contests." At this time of writing, all undergraduates of Amherst, Harvard, Yale, and Johns Hopkins who participate in gymnastics or games are thoroughly examined by the physician in charge of the respective gymnasias.

Dr. Seaver, of Yale, writes: "I examine all undergraduates, and their measurements are kept on record. . . . The plan is to re-examine the men each year while in college. . . . About 85 per cent. to 90 per cent. are re-examined. Dr. D. A. Sargent, of Harvard, informs me that at present all Harvard students participating in athletics are previously examined; that 87 per cent. of all the students are examined (non-athletic workers included)." From Princeton, Mr. Turner states that "students participating in gymnastic exercises receive physical examination at their own request only, which request is seldom made." Professor Edward Hitchcock, M. D., of Amherst, Mass., the oldest college gymnastic educator, writes me that every student wishing to engage in athletic sports is examined; that "sixty items of each examination are carefully preserved in folio manuscript of their physical condition and inheritance. We try to get the same repeated . . . at the end of the sophomore and at the end of the senior year. This latter is secured in about 90 per cent. of our students." Dr. Hartwell, of Johns Hopkins, informs me that all undergraduates are required to undergo a physical examination by the director of the gymnasium twice a year. The examinations are recorded. In this number are most of those who engage in athletics.

This class of men are very like those who came late under the observation of Dr. Humphrey, Dr. Morgan, Dr. Paget, Dr. Allbutt, and others.

Another class of American gymnasias—those of the

* By Professor Du Bois-Reymond, University of Berlin, in "Am. Bureau of Education Circular," No. V, 1883. Paper by Edward M. Hartwell, M. D., Ph. D. (of Johns Hopkins), in "Report of Society for Advancement of Physical Education," November, 1886.

† "College Athletics," "Popular Science Monthly," February and March, 1884.

Young Men's Christian Associations—are doing a great deal to advance the physical well-being of young men. In these are seen all classes of men—professional men, students, and representatives of the various trades. In a number of these physical measurements are taken, but the writer knows of but one* (that from which the data of this paper were derived) where the physical condition of every member is ascertained before commencing gymnastic work, and recorded at repeated intervals during the exercise. At this gymnasium such a preliminary physical examination is *required*, and is repeated every three months if the member desires. *The mode* of making the examination varies, as does the manner of recording it, with each examiner.

The writer has examined over seven hundred young men during the past three years at the Young Men's Institute.

These men represent nearly all classes. Some are students; some are sedentary, while others are active. The majority of them represent the various trades and occupations of laboring men. They are somewhat the same class of men as those who came under the observation of Dr. Allbutt,† Dr. Peacock,‡ Dr. Quain,* and others. To report accurately the influence of physical exercise upon these men, it is evident that the preliminary examination is of the utmost importance. It not only reveals the man's muscular deficiencies and general physical condition, but affords data from which to study—

1. *Hereditary Tendencies*.—By ascertaining (a) nationality; (b) parents' age, occupation, and health, or cause of death; (c) the number of brothers and sisters, their health, and the cause of their deaths.

2. *Effects of Various Modes of Living*.—By recording (a) number, time, and regularity of meals in twenty-four hours; (b) number of hours' sleep and when taken; (c) amount of physical exercise taken now and previously, including occupation; (d) amount of mental work done now and previously, including the man's education; (e) proportion of *out-door* and *in-door* life.

3. *Effects of Muscular Exercise*.—(a) Upon the *lung* capacity; (b) upon the *heart*; (c) upon the growth of muscle.

Such an examination as this enables the "trainer" or the gymnastic educator to intelligently advise a sufficient amount of rest, the proper amount and proper kind of exercise. Furthermore, such an examination affords an opportunity to obtain facts and statistics of value to the medical profession. The early history, and especially the etiology of certain diseases, which usually come late under the eye of the physician, can be more carefully studied and more accurately stated.

The growth of muscle, influence of heredity, sleep and stimulants, the effect of different forms of gymnastic exercises upon the thoracic and abdominal viscera, all afford ample opportunity for an endless amount of profitable original investigation.

* Young Men's Institute of the Young Men's Christian Association of New York City.

† "St. George's Hospital Reports," 1870.

‡ "Croonian Lectures," Churchill, London, 1865.

* "Medical Times and Gazette," 1872, p. 353.

Besides the usual modes of physical examination, three methods are especially useful and valuable in the gymnasium—viz., mensuration, the use of the spirometer, and of the sphygmograph. Mensuration is of value relatively in studying the growth of muscle and by showing the increase of thoracic expansion and collapse before and after certain periods of athletic exercise.

In this method of examination the length of trunk, depth and width of chest are taken, and together called (for lack of a better name) "vital capacity." The vital capacity becomes a matter of considerable importance in gymnastic training. Repeated observations have been made in the Institute gymnasium during the past three years of men exercising at different times and under different conditions. Some exercised with the chest bound tightly; some before a full meal, and again under the same conditions except after a hearty meal; some at an early and some at a late hour. From these repeated observations I believe it safe to say that the influence of deficient chest expansion upon the vital organs during exercise must be the same whether caused by a naturally small thorax, inelasticity from disuse, from exercise which itself tends to throw the shoulders forward and contract the chest, or from the influence of tight* clothing. These facts alone, it seems to me, are sufficient to emphasize the importance of preliminary and repeated physical examination of gymnastic workers, especially when we consider the liability of organic disease to lie dormant in a person of fairly healthy appearance. To be of most value, the successive measurements should be taken in the same situation by the same person and at the same time of the day. The following statistics were arranged, but not given to the publisher, early in 1887. Since that time a single tape has been used with a spring so arranged as to insure uniform tension; callipers have also been used, and Hutchinson's wet spirometer, as made by Tiemann, of New York, instead of Barnes's dry spirometer, has been employed.

The measurements in the following table (No. I) were made by the writer between October 15, 1885, and October 15, 1886. The instrument used was composed of two steel tapes, riveted to a copper plate, which is easily adjusted to the vertebral spines and held by an assistant. A line being drawn in the center of the sternum vertically, the measurements were taken just below the edge of the pectoralis major. Thus the measurements represent thoracic expansion, and not simply contraction of the pectoral muscles.

The table shows the right side of the chest to be $\frac{4}{12}$ inch larger than the left on extreme expiration, and $\frac{5}{12}$ inch larger on full inspiration. The average expansion of the right chest is $1\frac{2}{12}$ inch; of left chest is $1\frac{1}{12}$ inch. The measurements do not show the same relative increase with age to twenty-three years as does the spirometer test.

The *spirometer* used was *Barnes's dry spirometer*. The average respiratory capacity of 374 men examined by the writer from October 15, 1885, to March 1, 1887, is shown to be 215 cubic inches, which is 15 cubic inches less than

* "British Medical Journal," 1867, p. 161.

the average as given by Hutchinson* (1846). There is seen to be a gradual increase in respiratory capacity from fifteen to twenty-four years of age, the increased average of twenty-two years being due to the capacity of No. 42 (record-book of writer). This man without difficulty filled the spirometer (400 cubic inches) repeatedly. His chest, fully expanded, measured $40\frac{1}{2}$ inches, the right side measuring half an inch more than the left. Another table in this paper shows that Hutchinson's average (230 cubic inches) was reached after these men had practiced specified gymnastic exercises from three to six months for one hour three times each week.

TABLE NO. I.

Showing relative chest expansion of 199 men, and the chest capacity of 374 men at the time of entering the gymnasium.

Age.	No. examined.	FORCED EXPIRATION.		FORCED INSPIRATION.		No. examined.	Barnes's dry spirometer. Respiratory capacity.
		Right.	Left.	Right.	Left.		
15.....	3	$15\frac{3}{4}$	$15\frac{3}{8}$	$16\frac{5}{8}$	$16\frac{1}{4}$	3	210
16.....	14	$14\frac{3}{4}$	14	16	$15\frac{1}{2}$	19	185
17.....	36	$15\frac{1}{2}$	$14\frac{3}{4}$	$16\frac{1}{2}$	$15\frac{3}{8}$	83	195
18.....	30	$15\frac{3}{8}$	$15\frac{1}{2}$	$16\frac{1}{2}$	$16\frac{3}{8}$	46	200
19.....	22	$15\frac{1}{2}$	$14\frac{7}{8}$	$16\frac{1}{2}$	$16\frac{1}{8}$	35	205
20.....	14	16	$15\frac{7}{8}$	$17\frac{1}{8}$	$16\frac{3}{4}$	31	220
21.....	14	16	$15\frac{1}{2}$	17	$16\frac{1}{2}$	27	222
22.....	9	16	16	$17\frac{3}{8}$	$18\frac{1}{4}$	25	236
23.....	15	$16\frac{1}{2}$	$15\frac{3}{4}$	$17\frac{3}{8}$	$16\frac{7}{8}$	24	228
24.....	15	16	$15\frac{3}{4}$	$17\frac{3}{8}$	$16\frac{1}{2}$	22	235
25.....	8	$15\frac{7}{8}$	$15\frac{1}{2}$	$16\frac{1}{2}$	$16\frac{1}{8}$	12	216
26.....	4	$16\frac{1}{8}$	$16\frac{3}{8}$	$17\frac{7}{8}$	$17\frac{3}{8}$	11	234
27.....	3	$17\frac{1}{4}$	$16\frac{1}{4}$	$18\frac{1}{4}$	$17\frac{1}{2}$	13	244
28.....	3	$16\frac{1}{2}$	$16\frac{1}{2}$	$17\frac{1}{2}$	$17\frac{1}{2}$	7	246
30.....	3	$15\frac{3}{4}$	$15\frac{1}{2}$	$16\frac{7}{8}$	$16\frac{1}{2}$	6	216
31.....	1	17	$17\frac{3}{8}$	$18\frac{1}{2}$	$18\frac{1}{2}$	3	225
32.....	3	$17\frac{1}{2}$	$15\frac{7}{8}$	$18\frac{1}{2}$	$17\frac{1}{2}$	5	245
34.....	1	$13\frac{3}{4}$	$13\frac{1}{2}$	15	$14\frac{3}{8}$	1	195
42.....	1	23	23	24	$24\frac{1}{2}$	1	110
Av. age, $24\frac{1}{3}$..	199	$16\frac{1}{2}$	16	$17\frac{1}{2}$	$17\frac{1}{2}$	374	215

The *sphygmograph* as a means of physical diagnosis is of special value in just such study as that upon which this paper is based. Those who use this instrument are greatly indebted to such men as Marey, Mahomed, Pond, Dudgeon, Keyt, and others, who combined mechanical ingenuity with careful study, and developed an instrument which records fairly accurately the story which the pulse writes of itself. Although neither the stethometer, the spirometer, nor the sphygmograph are perfect, yet the records obtained by their use are more valuable than physical observations derived by sight, touch, or hearing. Few men, if any, can retain observations by these latter methods, while observations by the former can be recorded and kept for future comparison. The sphygmograph to be of value requires considerable previous use by the observer. For this reason and others it is but little used in general practice. Dudgeon's is doubtless the most quickly and easily adjusted and most accurate instrument. The paper used to receive the tracing is best glazed on one side. The glazed side should be smoked over burning camphor. The pulse-rate may be ascertained by measurement after the tracing has been made, the instrument having been regulated so as to carry the paper a certain distance per second. After the tracing is properly

* "Landois and Stirling's Physiology," 2d edition, p. 191.

labeled, which can be done by any sharp-pointed instrument, it can be preserved indefinitely for future study and comparison by varnishing with "Friar's balsam."

The sphygmograph thus records the frequency, force, and regularity of the heart's action. Mr. Myers* believes that this instrument "proves the heart to be overtaxed long before any change can be detected by auscultation or percussion." This statement I believe (although I have only taken 2,500 tracings) to be true to some extent directly, but more especially indirectly, by detecting some slight variation in the corresponding events of the cardiac cycles. This leads in many cases to further careful examination, which often reveals organic or functional trouble that might otherwise have escaped notice.

After the history and numerous muscle measurements have been recorded the chest is examined and a tracing taken with Dr. Dudgeon's instrument. If no organic trouble is found, the subject is allowed to raise himself to the chin on a horizontal bar and to "dip" on a parallel bar as many times as possible; then, after gripping the dynamometer with each hand, another tracing is taken and the chest is again examined. This test is made as a means of estimating the amount and kind of exercise most needed by the man under examination.

In the examinations thus far made by the writer, a sphygmographic tracing is taken when the excitement of the examination has "worn off." Then the man rises to his feet, the pulse-rate is taken and verified by the stethoscope placed over the apex of the heart. The effort of rising and standing causes the heart to act more rapidly. In one case this increase was thirteen beats per minute.

The average increase in pulse-rate caused by the effort of rising from the sitting to an erect position was found to be two and ten-elevenths beats per minute.

TABLE NO. II.

Showing the pulse-rate at various ages, taken while the man was in the standing position.

Age.	No. examined	Pulse-rate.	Age.	No. examined	Pulse-rate.
Years.			Years.		
16.....	6	87	27.....	10	79
17.....	47	88	28.....	4	81
18.....	19	85	29.....	2	86
19.....	13	86	30.....	2	79
20.....	15	83	31.....	2	79
21.....	13	84	32.....	3	81
22.....	17	84	33.....	2	85
23.....	12	89	35.....	1	83
24.....	8	92	38.....	1	64
25.....	4	78			
26.....	6	75	25, average.	187	Av. 82

Table No. II shows the average pulse-rate of 187 men of the ages named to be *82 per minute*. These figures represent the pulse-rate of fairly healthy men standing in the erect position. The re-examination of these men after three to five months of gymnastic exercise shows the average pulse-rate to be $79\frac{1}{4}$ per minute.

While the number of re-examinations thus far made is not sufficient to warrant a decided statement, yet we may infer that *athletic exercise* which strengthens the voluntary muscular system *tends to strengthen the heart-muscle, tends*

* "Alexandrian Prize Essay," Churchill, London, 1870, page 43.

to reduce the nervous excitability of city life, and thus to influence the pulse-rate toward the normal standard.

From the preceding pages, and from sphygmographic observations, it is evident that respiratory capacity and thoracic expansion are important factors in estimating the influence of muscular exertion upon the heart. The following tables (Nos. III and IV) show that careful gymnastic exercise materially increases both these factors:

TABLE NO. III.

Showing respiratory capacity (measured by Barnes's dry spirometer) before and after gymnastic exercise of from three to six months' duration.

Age. Years.	BEFORE EXERCISING.		AFTER EXERCISING.	
	No. examined.	Average chest capacity.	No. examined.	Average chest capacity.
15.....	3	210	3	220
16.....	19	185	11	201
17.....	83	195	32	210
18.....	46	200	24	222
19.....	35	205	17	228
20.....	31	220	9	230
21.....	27	222	9	233
22.....	25	236	4	274
23.....	24	228	7	235
24.....	22	235	8	232
25.....	12	216	2	233
26.....	11	234	4	241
27.....	13	244	1	210
28.....	7	246	3	266
29.....	2	240	..	...
30.....	6	216	2	195
31.....	3	225	1	340
32.....	5	243	..	...
33.....	2	227	..	...
34.....	1	195	1	190
35.....	1	325	..	...
42.....	1	110	1	180
25 $\frac{17}{22}$ average.	379	220 ave. cap.	139	230 ave. cap.

TABLE NO. IV.

Showing the range of thoracic expansion and collapse of both sides of the chest, and of each side separately, taken at the same time. The measurements were made before and after from three to six months' of athletic exercise, and were taken at the lower border of the pectoralis major.

Age.	No. exam- ined.	BEFORE EXERCISE.				No. exam- ined.	AFTER EXERCISE.			
		Repose.		Full.			Repose.		Full.	
		Right	Left.	Right	Left.		Right	Left.	Right	Left.
15.....	3	15 $\frac{3}{4}$	15 $\frac{3}{8}$	16 $\frac{3}{8}$	16 $\frac{1}{4}$	3	15 $\frac{1}{2}$	15 $\frac{1}{2}$	16 $\frac{3}{8}$	16 $\frac{1}{2}$
16.....	14	14 $\frac{3}{4}$	14	16	15 $\frac{1}{2}$	8	15 $\frac{3}{4}$	14 $\frac{3}{4}$	16 $\frac{1}{2}$	16
17.....	36	15 $\frac{1}{2}$	14 $\frac{3}{4}$	16 $\frac{1}{2}$	15 $\frac{1}{2}$	26	15 $\frac{1}{2}$	15 $\frac{1}{2}$	16 $\frac{3}{8}$	16 $\frac{1}{2}$
18.....	30	15 $\frac{3}{4}$	15 $\frac{1}{2}$	16 $\frac{1}{2}$	16 $\frac{1}{8}$	19	16 $\frac{1}{2}$	15 $\frac{3}{4}$	17 $\frac{3}{8}$	16 $\frac{3}{4}$
19.....	22	15 $\frac{1}{2}$	14 $\frac{3}{4}$	16 $\frac{1}{2}$	16 $\frac{1}{8}$	12	15 $\frac{3}{4}$	15 $\frac{1}{2}$	17	16 $\frac{3}{4}$
20.....	14	16	15 $\frac{1}{2}$	17 $\frac{1}{2}$	16 $\frac{3}{4}$	9	16 $\frac{1}{2}$	15 $\frac{3}{8}$	17 $\frac{1}{2}$	17
21.....	14	16	15 $\frac{1}{2}$	17	16 $\frac{1}{2}$	6	16 $\frac{1}{2}$	16	17 $\frac{1}{2}$	17
22.....	9	16	16	17 $\frac{3}{4}$	18 $\frac{1}{2}$	4	16 $\frac{1}{2}$	16 $\frac{7}{8}$	18	17 $\frac{3}{4}$
23.....	15	16 $\frac{1}{2}$	15 $\frac{3}{4}$	17 $\frac{3}{4}$	16 $\frac{3}{4}$	5	17 $\frac{1}{2}$	16 $\frac{3}{4}$	18 $\frac{1}{2}$	17 $\frac{3}{4}$
24.....	15	16	15 $\frac{3}{4}$	17 $\frac{3}{4}$	16 $\frac{3}{4}$	7	15 $\frac{3}{4}$	15 $\frac{3}{4}$	17 $\frac{3}{4}$	16 $\frac{3}{4}$
25.....	8	15 $\frac{3}{4}$	15 $\frac{1}{2}$	16 $\frac{3}{4}$	16 $\frac{1}{2}$	2	15 $\frac{3}{4}$	16	16 $\frac{3}{4}$	16 $\frac{3}{4}$
26.....	4	16 $\frac{7}{8}$	16 $\frac{3}{4}$	17 $\frac{1}{2}$	17 $\frac{3}{4}$	3	16 $\frac{1}{2}$	16 $\frac{3}{8}$	18 $\frac{1}{2}$	17 $\frac{3}{4}$
27.....	3	17 $\frac{1}{2}$	16 $\frac{1}{2}$	18 $\frac{1}{2}$	17 $\frac{1}{2}$	1	15 $\frac{3}{4}$	15 $\frac{3}{4}$	16 $\frac{3}{4}$	16 $\frac{3}{4}$
28.....	3	16 $\frac{1}{2}$	16 $\frac{1}{2}$	17 $\frac{1}{2}$	17 $\frac{3}{4}$	3	16 $\frac{1}{2}$	16 $\frac{1}{2}$	17 $\frac{1}{2}$	17 $\frac{1}{2}$
30.....	3	15 $\frac{3}{4}$	15 $\frac{1}{2}$	16 $\frac{1}{2}$	16 $\frac{1}{2}$	3	15 $\frac{3}{4}$	15 $\frac{3}{4}$	16 $\frac{3}{4}$	16 $\frac{3}{4}$
31.....	1	17 $\frac{1}{2}$	17 $\frac{3}{4}$	18 $\frac{1}{2}$	18 $\frac{1}{2}$					
32.....	3	17 $\frac{1}{2}$	16 $\frac{3}{4}$	18 $\frac{1}{2}$	17 $\frac{1}{2}$	1	17	16	19	18 $\frac{1}{2}$
34.....	1	13 $\frac{3}{4}$	13 $\frac{1}{2}$	15	14 $\frac{3}{8}$	1	14	13 $\frac{3}{4}$	15	14 $\frac{1}{2}$
42.....	1	23	23	24	24 $\frac{1}{2}$	1	23 $\frac{1}{2}$	23 $\frac{1}{2}$	24 $\frac{1}{2}$	24 $\frac{1}{2}$
24 $\frac{1}{2}$, aver.	199	16 $\frac{1}{2}$	16	17 $\frac{1}{2}$	17 $\frac{1}{2}$	114	16 $\frac{3}{4}$	16 $\frac{1}{2}$	17 $\frac{3}{4}$	17 $\frac{1}{2}$
		32 $\frac{1}{2}$		34 $\frac{7}{8}$			32 $\frac{3}{4}$		35 $\frac{1}{8}$	

The increase in lung capacity is (Table No. III) about the same in men over twenty-three years of age as in those who are younger. The increase in chest expansion is much less after that age. The greatest increase is seen between the ages of seventeen and twenty years.

It seems fair to infer that this increased lung capacity brings into action a greater number of air-cells, thus increasing the oxygenating surface of the lungs. The increased appetite which accompanies gymnastic exercise calls for an increased amount of nourishing food. The blood, thus enriched with more food and more oxygen, not only increases the size and strength of the voluntary muscles, but also nourishes and builds up the heart-muscle.

The increased chest capacity and expansion also affords the heart more room, or at least renders its action more regular, as was shown by the sphygmograph, when exercise was taken without any constriction of the thorax, and again when the chest was bound by a tightly buttoned coat or constricted by belts, or after a hearty meal.

New Method of recording Sphygmographic Tracings.

—This article has been of necessity very hastily prepared, and does not permit the introduction of sphygmographic tracings illustrating the effect of gymnastic exercises. One great hindrance in scientific work is the difficulty of classifying results of various observations so that they may be studied in different ways and permit correct deductions.

More than one sphygmographic tracing can seldom be taken illustrating the point under consideration. Many times one wishes to group these tracings in different ways for study.

To accomplish this purpose I have tried various methods, using mica, oiled paper, etc., but with little satisfaction. Finally, however, I tried gelatin plate, with good results. This can be purchased in large, thin sheets, and cut into plates (for Dudgeon's sphygmograph, $\frac{2}{3}$ inch wide and six or more inches long). These plates are smoked in the usual way, care being exercised not to burn the gelatin. After the tracing has been taken, numbered, and properly labeled, it is treated to a bath in compound tincture of benzoin. When it is thoroughly dry we have a negative which can be used repeatedly à la photographer. If one wishes to photograph a person before and after certain periods of gymnastic training, corresponding tracings taken in this way can also be photographed without destroying the original. A simple method of grouping tracings is available by using ordinary blue print paper, such as is used by architects and designers. Five minutes' exposure to bright sunlight is sufficient to develop a distinct blue line on a white ground, which is made permanent by immediately immersing the paper in water for the same length of time. The same paper, differently prepared, will develop a white tracing on a blue ground. The blue ground or margin can be utilized for notes or labeling by simply writing the same with a saturated solution of sodium bicarbonate. In these ways sphygmographic tracings can be grouped and preserved indefinitely for reference, writing, or study.

These gelatine negatives may be utilized in photo-mechanical printing processes, in the Woodbury type process, and in photo-lithography.

This method of recording tracings renders the sphygmograph more practical and useful, especially in a careful study of physical diagnosis. To be sure, the story written by this little instrument is not absolute, but if properly used it speaks of truths which lie unwritten within the thoracic cavity. Scores and hundreds of tracings which have been thus taken and recorded serve to prove that considerable careful training is necessary to enable the heart to act normally when more or less severe exercise is undertaken. They show also that the "trainer" (physical director) should carefully observe his men and adapt the exercise to the individual, instead of putting every man through the same routine.

So far as I have been able to ascertain, *the men who have suffered from the effects of athletic exercise have been more frequently men of a certain delicacy of fiber than those who were brawny and muscular*; or in either case men whose previous "training" was insufficient or too hasty; who have resorted too frequently to cardiac excito-motors and not enough to sleep; or, in a few cases, men who have allowed their enthusiasm to exceed the bounds of reason.

The heart itself is a muscle, and the vessels which issue from its cavity are surrounded by muscular bands.

Three things are necessary to promote the advantages and inhibit any evil influence of athletic exercise upon the vital organs—viz.: 1. That "training" be commenced early, be more gradual, and extend over a longer period (at least seven to nine months before any contest). 2. That the "training" be directed by a practical physiologist, who knows the condition of each man in charge. 3. That the supporters of our college and association gymnasia make the salary of the physical director such as to enable him to give up his whole time and energy to the study of his profession. If, then, training (preceded by a thorough physical examination) be commenced gradually and carried out systematically, it will be the means of strengthening the muscles both of the heart and vascular system in a degree proportionate to that in which it develops the voluntary muscles. Such a proportionate and healthy development is normal, and is to be desired for hearty vigorous living. Athleticism of the past is becoming modern physical education. It is impossible to doubt that many circumstances of the present day, especially in our larger towns and cities, tend to weaken both men and women.

These depressing influences, as population increases, must tell with augmenting effect. To counteract this tendency, every game, every pastime, and every variety of exercise tending to make men more muscular, stronger, and healthier, is deserving of encouragement. The time and medical skill bestowed in patching up the most confirmed invalids doubtless prolongs their lives and is in harmony with the humane sentiment of the nineteenth century; but, in the interest of the state, such must be regarded as a national calamity.

Transmitted and inherited disease degrades civilization and makes families miserable. The principles of physical education are intended to combat these baneful inheritances; improve and strengthen the human stock. Gymnastics form the practical part of "physical science." The

gymnasia of our universities and associations are being placed in the hands of the medical profession. The field for careful investigation is a broad one, and it is to be hoped that men will be ready with sound physiological and hygienic ideas to give their time and energy and careful study to this work of *promoting health and aiding their profession*.

19 EAST 127TH STREET, NEW YORK CITY.

TWO CASES OF PRIMARY CARCINOMA OF THE VAGINA.

By LEROY BROWN, M. D.,

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THE following two histories of cases of vaginal carcinoma, admitted to the New York Cancer Hospital, are interesting on account of the rarity of the disease, and especially is this the case with the first of these, from the fact of its position upon the anterior wall and not in the usual posterior location. They are as follows:

CASE I.—Mrs. R. was admitted to the hospital March 27, 1888, to the service of Dr. James B. Hunter. She was fifty-four years of age and a widow. She had had six children, the last in 1868, and two miscarriages, the last of which occurred in 1870.

Her general health had always been good, with the exception of a slight diarrhoea lasting for twenty-five years. She gave no history of any uterine trouble, and her menstruation had always been normal up to the menopause. Her family history gives the fact that her mother died of cancer of the breast.

During the summer of 1886, and up to August, 1887, she had a history of frequent attacks of pruritus vulvæ. In August she was told of a growth existing on the anterior wall of the vagina. From this date up to the time of admission to the hospital she had frequent attacks of pruritus, an almost constant thin, watery discharge, at times bloody, of an offensive odor, and some pain.

When admitted to the hospital the uterus was freely movable, the cervix was normal, as were the upper two inches and a half of the posterior vaginal wall and about an inch of the upper part of the anterior wall. The anterior wall from this point above to within about half an inch of the urethral meatus was infiltrated and thickened, and presented to the touch numerous elevations, all of which bled easily under the examination.

The posterior vaginal wall presented only a small area of infiltration without any ulceration. At this point the vagina was slightly contracted, though not extensively enough to interfere with a thorough examination of both uterus and vagina.

This patient was treated in the hospital for about a month and a half, during which time she was repeatedly seen by the attending surgeon of the division in which she was placed.

CASE II was that of Miss L. She was admitted to the hospital on May 3, 1888, in the service of Dr. Clement Cleveland. She was thirty-nine years of age, and single.

Her occupation was that of a cook, and she was of good habits. She gave no history of syphilis. Her general health had been fair up to almost a year previous. Her family history was negative.

For the previous two months she had been gradually losing flesh, and did not know the cause.

Some three weeks before entering the hospital she applied to one of the general hospitals of the city for relief, and from

this place she was sent to this institution. She said that she knew nothing of any trouble with her vagina or uterus until told of it in St. Luke's Hospital, as she had experienced no pelvic pain whatever, and only now and then some loss of blood.

Upon her admission, the general condition of the patient was poor, she being emaciated, cachectic, and very feeble. The vagina was filled up with a cauliflower growth almost protruding from the vagina, and bleeding freely under the examination. Upward it extended beyond the reach of the finger.

By rectal touch, it was found that the intestinal mucous membrane was not involved. The mass plainly pressed the anterior wall of the rectum backward. Farther up could be felt a space, of about half an inch in extent, between the growth and the cervix. Through this portion of the recto-vaginal septum the cervix could be felt apparently normal, and could be easily made out; also the uterus could be freely moved.

The miserable condition of the patient prevented anything being done as to attempts at removal of the mass, and there was no absolute proof as to its exact location.

She died some two weeks after entering the hospital, and no autopsy was allowed.

These two cases are of especial interest from the rare location of the neoplasm. Its unusual occurrence in this situation is very striking. Hart and Barbour state that Biegall collected 8,287 cases of cancer of the vagina, with only 14 out of the number as primarily occurring in this locality. Dr. Parvin, of Philadelphia, cites Grammatikati as stating that only *thirty-eight* cases have as yet been published.

Of the two cases mentioned in this article, the latter can not be stated positively as commencing *de novo* in the vagina, yet all the indications presented on examination pointed to this condition.

The cervix, with its central indentation, could be easily made out through the rectal wall, and the feel was that of one perfectly normal in all respects.

TOBACCO: ITS USE AND ABUSE.

By C. W. LYMAN.

THERE are 5,250,000 acres of land in the world given up to the cultivation of tobacco. As this plant will not grow in a poor, or even in a medium, grade of soil to any advantage, it follows that these acres represent the richest agricultural lands. Tobacco being a very exhausting crop to the soil, these acres must be extensively and frequently fertilized, or the plant must be cultivated in new soil. In France and Austria tobacco is classed as a luxury, and both its manufacture and sale are monopolized by the government. The income so derived is said to be great and without much variation. In the United States the internal revenue on tobacco is more than forty millions of dollars.

Tobacco contains an acrid, dark-brown oil, an alkaloid, nicotine, and another substance called nicotianine, in which exist its odorous and volatile principles. This description of the active principles of tobacco is of importance to smokers, for, when tobacco is burned, a new set of substances is produced, some of which are less harmful than the nicotine and are more agreeable in effect, and much of

the acrid oil, a substance quite as irritating and poisonous as nicotine, is carried off. These fire-produced substances are called, from their origin, the pyridine series. By great heat the more aromatic and less harmful members of the series are produced, but the more poisonous compounds are generated by the slow combustion of damp tobacco.

Now, this oil which is liberated by combustion is bad both in flavor and in effect, and it is better even for the immediate pleasure of the smoker that it should be excluded altogether from his mouth and air-passages. Smoking at its best is well described by Mrs. Harriet Martineau, who acquired the habit in Egypt during her voyage up the Nile. The small bowl of the chibouk used by the Arabs is attached to a stem several feet in length, in the interior of which all the poisonous oil is condensed and deposited. By inserting a small piece of cotton into the stem each time the pipe is used, or by drawing the smoke through water, the smoker may evade the bad effects produced by the oil. This chibouk was smoked only in the evening after dinner. Mrs. Martineau thought that her health improved while using it, and she continued in the habit after her return from the East. But ordinary pipes, especially old pipes, are without excuse. The tobacco smolders in the large bowl, the more harmful vapors of the pyridine series enter the mouth and throat, the oil saturates the bowl and stem, and after that enters the mouth with the smoke.

Smoking in a stub of a pipe is particularly injurious, for the reason that in it the oil is stored in a condensed form, and the smoke is therefore highly charged with the oil. Sucking or chewing the stub of a cigar that one is smoking is a serious mistake, because the nicotine in the unburned tobacco dissolves freely in the saliva and is absorbed. "Chewing" is on this account the most injurious form of the tobacco habit, and the use of a cigar-holder is an improvement on the custom of holding the cigar between the teeth. Cigarettes are responsible for a great amount of mischief, not because the smoke from the paper has any particularly evil effect, but because smokers—and they are often boys or very young men—are apt to use them continuously or at frequent intervals, believing that their power for evil is insignificant. Thus the nerves are under the constant influence of the drug and much injury to the system results. Moreover, the cigarette smoker uses a very considerable amount of tobacco during the course of a day. "Dipping" and "snuffing" are semi-barbarities which need not be discussed. Not much effect is obtained from the use of the drug in these varieties of the habit.

With thousands of men about us all the time who are taking daily full doses of this drug tobacco, many of whom are willing to testify as to their experience, it apparently should not be difficult to arrive at exact conclusions as to its effect on the human organism. Yet it is a fact that very different opinions in regard to tobacco are current. It is the object of this paper to connect a series of facts which are well established, and to give to the different facts in regard to tobacco their relative importance.

Now, the effects of bringing tobacco by any method into contact with the tissues of the body are more or less modifications of what pure nicotine itself does when the body

falls under its influence. So that, after admitting that one method of using tobacco may be worse or better than another, it is perfectly fair to examine all of them at the same time by an inquiry into the actual effects of nicotine.

Nicotine is one of the most powerful of the "nerve poisons" known. Its virulence is compared to that of prussic acid. If birds be made to inhale its vapor in amounts too small to be measured, they are almost instantly killed. It seems to destroy life not by attacking a few but all of the functions essential to it, beginning at the center, the heart. A significant indication of this is that there is no substance known which can counteract its effects; the system either succumbs or survives. Its depressing action on the heart is by far the most noticeable and noteworthy symptom of nicotine-poisoning. The frequent existence of what is known as "smoker's heart" in men whose health is in no other respect disturbed is due to this fact.

Extreme faintness and giddiness, followed by an indescribable feeling of sinking and misery, and then horrible nausea, vomiting, and great muscular weakness, are caused by even moderate doses of the drug. Tobacco, after the habit of using it is formed, is a cerebral stimulant. The exhilarating effects produced by the drug are evidently due to the excitement attending the resistance offered by the life-force to the attack of a foreign or noxious element present in an amount not too great to be overcome. Were there present a little too much of this poison, life is either destroyed or a long time is required in which to repair damages. Can any one believe that the smaller dose can give any real increase of power, and that the larger one can take it away in so alarming a manner? Now, some idea of what effect the smoke of burning tobacco can produce in a human body may be conceived by a glance at the results of its long-continued use in the cases of "those who are hurt by it," as the expression is—that is, in that large majority of smokers who use it in excess, as an habitual indulgence with a direct view to pleasure; not as the Arab uses his after-dinner chibouk, nor yet as a means of modifying discomfort on particular occasions. In the strongest men, those with much of what we call "surplus" vitality, tests must be delicate. The apparent absence of effect in these unusually powerful men is constantly instanced by deluded friends of tobacco, implying by this that they believe that if it does not injure one man it can not badly injure another. But in those who have not enough vitality to resist the effect of the amount of tobacco they use, whose general good health can not, at least, be supported at the same time, results are evident and very noticeable, and yet they need not necessarily be of an apparent variety at first. A healthy body is elastic, and resists injurious influences up to a certain point. It may be that the more marked results will only appear after a number of years' use of the pipe or of chewing tobacco. Dr. Franzel, of Berlin, observes that in his country immoderate smoking agrees, as a rule, with persons for many years, although by degrees cigars of a finer flavor are chosen. But at last, suddenly, and without any other assignable cause, trouble with the heart begins, and a physician is consulted. These troubles seldom begin

until the smoker has passed his thirtieth year, and usually appear at an age between fifty and sixty years. The Germans are less nervous and heartier than are their descendants, after a few generations of residence on this side the Atlantic have made them Americans. Another result may be seen in the case of a certain well-known chemist, a man of great energy and large attainments in science, who chewed tobacco, and had been addicted to the habit for a long time. In chewing, depression of spirits and dullness of mind were the final results. This eminent chemist says that of late years, though obliged to take his tobacco regularly, he ordinarily gets no pleasure from its use; rather the reverse. However, once in a week or two, for a single morning, he will experience the old pleasure. It soon passes away, and to it succeeds another period of slavery and great discomfort.

Another class of people can not resist the effects of tobacco at all, can not form the habit, or even stay in a room in which there is tobacco-smoke. It is a well-established rule that no tobacco may be used by a man who is training for an athletic contest. Such a man is usually one of the toughest and strongest, a pugilist or a professional oarsman, and possessing great physical endurance. Those who can use tobacco without immediate injury will have all the pleasant effects reversed, and will suffer from the symptoms of poisoning if they exceed the limits of tolerance. These symptoms are: 1. The heart's action becomes more rapid when tobacco is used. 2. Palpitation, pain, or unusual sensations in the heart. 3. There is no appetite in the morning, the tongue is coated, delicate flavors are not appreciated, and acid dyspepsia occurs after eating. 4. Soreness of the mouth and throat or nasal catarrh appear and become very troublesome. 5. The eyesight becomes poor, but improves when the habit is abandoned. 6. A desire, often a craving, for liquor or some other stimulant is experienced.

A lesser degree of injury may be shown by general restlessness, insomnia, depression of mind, or the development of a dull or irritable temper. Any man who enjoys his tobacco more with a glass of beer or spirits has a heart the action of which has been weakened by the use of tobacco.

A finer and very certain test is that the desire for the society of women is no longer felt as it may once have been. The dreamy and solitary enjoyment of a good cigar takes the place of social pleasures. It is reasonable to assume that the "Reveries of a Bachelor" were tobacco visions. The immediate result of addiction to the use of this drug is felt by women, who very commonly recognize in tobacco a direct enemy to their influence with men. A most ennobling element in social life is thus impaired. Another and most deplorable result of the tobacco habit is that the children of an apparently vigorous man who is addicted to the use of tobacco in some form will often show the symptoms of tobacco poisoning from which the father had never suffered. The general health of these children will be poor as compared with that of the father, the circulation will perhaps be poor, and the face will be pale; there will be a tendency to catarrh, a somewhat nervous, unhappy, cold, or

joyless disposition, weak digestion, or a taste for dainty and stimulating food. The father, perhaps, will nevertheless tell you sincerely that he had still to find that the use of tobacco was injurious to him; that, on the contrary, he obtained much comfort from it.

The finest test of all is of a somewhat ethical nature, it is true, for it has to do with that element which is last developed in the nature of man—religious emotion, taken in the broad significance of the term. The strictly scientific investigators of this subject have stopped at this point with the remark that they were not dealing with ethical questions or results involved, but only with those of a physical nature. But, believing that these can not be separated, and not being limited to the use of medical terms in a discussion so general as this, a few facts come into place here. It was a matter of fixed belief with a celebrated clergyman that the amount of Christianity a man could receive into his soul had a very close dependence upon the state of his liver. On the other hand, a professor connected with a prominent medical college, while lecturing on disorders of the liver, stated that the use of tobacco in even the smallest amount impairs the functional action of the liver on the blood passing through it, and that the abnormal state of the blood thus caused will manifest itself by disturbance in the brain. When a patient is found to have this form of cerebral disturbance, to stop his use of tobacco at the outset of treatment is a *sine qua non*. These two statements of leading authorities seem to connect themselves.

On growing boys and on young men under twenty-five years of age the use of tobacco is known to cause notably bad effects in almost every instance. Especially is this so if the food be scant. The injury which is ultimately done is probably not greater than in the case of the adult who has come into his full powers of resistance to the effects of the drug; there is simply more to be used up in the latter instance, especially the force which nature intended to give to the succeeding generation. It is from this fact that an idea is current that smoking indicates manliness of character, and to the force of social opinion on this point among young men must be credited no small portion of the number of recruits which are annually added to those who use tobacco.

In an experimental observation of 38 boys of all classes of society and of average health who had been using tobacco for periods ranging from two months to two years, 27 showed severe injury to the constitution and insufficient growth; 32 showed the existence of irregularity of the heart's action, disordered stomachs, cough, and a craving for alcohol; 13 had intermittency of the pulse; and 1 had consumption. After they had abandoned the use of tobacco, within six months' time one half were free from all their former symptoms, and the remainder had recovered by the end of the year.

It is not difficult to break the habit if the mind be diverted and the food be good. There is no constitutional reaction, as is the case when the use of opium or alcohol is abandoned; but the strength begins to improve, and the ability to sleep, digest, and see improves at once. While

this is so commonly true as to have justified the statement that "the habit is, physiologically, not hard to break," it is to be noted that in men whose constitutions are thoroughly shaken and undermined by the effects of tobacco, an attempt to abandon its use is sometimes accompanied by tremor and a feeling of general misery which are practically intolerable. Such persons are indeed slaves to the habit. However, it is worth repeating that complete diversion of the mind (not always an easy thing to bring about) and good feeding are enough in most instances to make the abandonment of the habit easy.

The pleasant effects of tobacco are realized only after the habit is formed. Tobacco is not alone in the possession of this quality; it is much better known in the case of tobacco than in the case of some other drugs producing similar pleasurable effects. But it is believed that if any of the nerve-paralyzers were taken for a long time in minute doses until an habitual resistance was established, that drug would finally act as a stimulant, and a certain pleasurable excitement would accompany the effort which the body had learned to make in throwing off its influence. In Africa, the *Physostigma venenosum*, or "judgment bean," used in the trial of witches, has also been put to this use of a stimulant by a few.

The only question about tobacco which is really in need of a settlement is the following, and it is important that it should be dealt with justly—namely: Is there, after all, such a thing as a genuinely temperate use of tobacco? Perhaps; perhaps not. The answer depends largely on the degree of health which one judges to be the normal standard for the individual, especially in those cases in which, on account of other reasons, a state of either absolutely perfect or even of good health is out of the question. Few people know what are the sensations and general state of consciousness proper to a completely temperate way of living after the period of childhood has been passed. Their habits of life, and especially their habits of thought, once having become unnatural as a result of the artificial conditions of civilization, competition and particular callings, debility and the wear of rapid living, and their feelings and senses having been altered, a new estimate of what it is to feel well is made. Different tastes and new needs, never before known to a body that is, as trainers express it, "pure," arise. Particularly does a craving come for some means of abolishing sensation at times when sensation is not exactly agreeable, and of blunting the edge of a too insistent voice of mental consciousness busy over the cares of the past and of the coming day. Or it is a hungering for something to relieve the *ennui* of solitude or of uncongenial society, or the worse *ennui* of having no aspirations or necessities that force the employment of the energies. Now, for many, tobacco satisfies this want for the time—that is, it seems to do so by its immediate effect. If the great mass of men, as men now are, could obtain no tobacco, some other narcotic more or less its equivalent would certainly be found and used. A fact sad enough, but a fact it is, that they "must have something." There is no physician who has not heard these words more-times than he can remember.

Now, scientific men have decided that there is a class

which, in this attempt to overcome sensibility to unpleasant conditions, do get apparently beneficial effects from tobacco, inspection not being too close. In many, they report, no immediately evident injuries appear from the use of tobacco by adults past the most vigorous period of life if taken in small amounts at intervals, and rather long intervals. It is said that under these conditions it may be used to take away, by its stimulus to the heart and nervous system, the unpleasant sensations arising from fatigue, poor food or lack of food, exposure, strain, or worry. So employed, it then gives aptitude for work; quiet, and good digestion after severe labor; bodily energy when food or sleep can not be had.

As illustrating this favorable action, both English and American authorities instance the case of a sportsman whom the afternoon of a day in the field finds miles from home, beginning to feel faint for want of food, and somewhat fatigued. A few minutes' smoking removes all sense of hunger and "goneness," and restores elasticity to his limbs. It is thus like opium and coca in seeming to arouse active vital processes, and to restore a normal rhythm. A close question arises in many minds in such a case whether the body and brain will suffer more by allowing hunger, discomfort, or mental depression to continue than from the drug which intervenes with its action, and prevents their being felt.

Tobacco will often thus have the immediate advantage of giving comfort, and, with this in view, it now forms part of the regular ration in the German army. They find that soldiers will go through the hardships and anxieties of a campaign better with it than without.

Used occasionally under such unusual circumstances as have just been indicated, and by a man of mature years, good constitution, and out-door occupation, it would necessarily be hard to measure what amount of detriment his total of health sustained. His abundant vitality would easily cover up small losses from any ordinary or immediate tests, and they are the only sort which most people have any disposition to make in a matter involving their daily comforts, whatever they may suppose *them* to consist in. It would show, however, if he engaged in a boat-race, or underwent a severe surgical operation. But the number of those who confine themselves to such a comparatively temperate use of tobacco is not large. A great majority go far beyond any such limitations, and evidences of injury are easily found. It is only necessary to have some record of what the general health was previous to the taking up of the habit, and to have observation cover a long enough time. The history of tobacco in the island of New Zealand furnishes a quite suggestive illustration for our purpose, and one on a large scale. When Europeans first visited New Zealand they found in the native Maoris the most finely developed and powerful men of any of the tribes inhabiting the islands of the Pacific. Since the introduction of tobacco, for which the Maoris developed a passionate liking, they have from this cause alone, it is said, become decimated in numbers, and at the same time reduced in stature and in physical well-being so as to be an altogether inferior type of men.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 8, 1888.

ENTEROSTOMY VERSUS LAPAROTOMY IN ACUTE INTESTINAL OBSTRUCTION.

DR. B. F. CURTIS, in the "Medical Record," in urging the employment of enterostomy—which he defines as "the operation of forming an artificial anus in any portion of the intestinal canal, including both colotomy and 'enterotomy'"—in the treatment of acute intestinal obstruction, gives the statistics of a series of sixty-two such operations. In forty-six, or seventy-two per cent., of the cases relief was given by the operation; six of the patients were not relieved (in three of these the fistula was established below the point of obstruction), and in the remaining ten the result was either fatal or no definite statement as to the relief afforded by the operation was recorded. Thirty of the patients died, making the mortality 48.3 per cent.

As to the efficiency of the operation in relieving the symptoms and in ultimately overcoming the obstruction, it was found that in nineteen cases, or sixty per cent. of those in which recovery took place, normal passages *per anum* were resumed after an interval of time which varied from twenty-four hours to ten weeks' duration. The last fifteen cases of the series give the following remarkable statistics: Relieved, 14; unrelieved, 1; died, 4; recovered, 11. Of these eleven successful cases, defecation *per anum* was resumed in seven. In one of the fatal cases death was due to an attack of erysipelas occurring two months after the operation, but in which the bowels moved naturally after fourteen days' time. In seven cases the fistula closed spontaneously.

In many of the fatal cases the exceedingly poor condition of the patient was assigned as the reason for the choice of enterostomy instead of laparotomy as the method of treatment, involving, as it does, the lesser amount of shock and danger of causing inflammatory action. The causes of death in fatal cases are thus classified: Those directly due to the operation or its failure, sixteen, consisting of sepsis, failure to reach the distended gut, subsequent gangrene of the gut, and shock; those due to causes independent of the operation, and those unknown, fourteen, comprising bad condition of the patient, heart failure, perforation of the gut on the thirteenth day, gangrene of the gut existing at the time of operation, and extensive adhesions in the case of an infant suffering from malnutrition. The histories of these cases show that intussusception, volvulus, constriction by bands or adhesions, impaction of foreign bodies, and even internal incarceration, can be rendered harmless by relieving the pressure from behind by opening the distended intestine at a point above the seat of obstruction. At all events, the operation gives

a "fighting chance," and there is considerable ground for the belief that the removal of the pressure behind the obstruction may, in many cases, permit the intestine to expel the matter causing this by its own action, or to escape from the grasp of a constricting band or adhesion. Gangrene of the gut does not necessarily occur from volvulus or internal incarceration, as is shown by the facts presented by the histories of some of these cases, while those of others show that the cause of obstruction may be absolutely removed, or rendered so harmless that the normal function of the gut is performed, by the removal of pressure from behind.

Contrasting these statistics with those obtained from the study of three hundred and twenty-eight cases of laparotomy for acute intestinal obstruction, the author forms the following conclusions: The mortality of laparotomy for this condition is 68.9 per cent. against the 48.7 per cent. of enterostomy; of three hundred and twenty-eight cases treated by laparotomy, 5.8 per cent. were fatal because of failure to remove the cause of obstruction, while 4.8 per cent. of sixty-two cases of enterostomy were fatal for the same reason; enterostomy restored the power of normal defecation in 60 per cent. of the cases, while even laparotomy achieved this result in but 79 per cent. of the cases in which recovery resulted; laparotomy is the preferable operation only in cases in which the patient is in sufficiently good condition to bear the shock of the operation, and those in which the intestine is not too greatly distended to allow of a thorough examination of the abdominal contents; enterostomy should be performed in all other cases, and may be followed by laparotomy should it prove to be inefficient, for the purpose of removing the cause of obstruction and of closing the artificial anus; and, finally, whichever of the two operations be chosen, it should be performed at as early a period in the course of the affection as possible.

The facts and figures presented by Dr. Curtis are extremely interesting and, we believe, surprising to the greater number of surgeons. The condition to be relieved is of such varied and obscure a nature, at least so far as diagnosis of the actual state of affairs is concerned, that the formulation of any rule to be regularly followed in its treatment is well-nigh rendered impossible. The employment of simple measures, such as the forcible injection of large quantities of water or the inflation of the gut with gas *per rectum*, has often been successful in apparently hopeless cases, and we fancy that the general practice of establishing an artificial anus, with all the disgusting and discomforting conditions which are attendant on its presence, will not meet with the approval of the profession at large or the submission of that portion of the laity which is wont to look upon cleanliness as second only to godliness. The statistics given are unanswerable as far as results are concerned, and, from a purely scientific point of view, sustain the author in his position; but the free-born citizen does not, unfortunately, possess that deep and enthusiastic desire to conform to the line of conduct prescribed by science when his life or physiological functions are endangered or deranged.

If it were possible to make an exact diagnosis as to the

cause and location of the obstruction in these cases, the choice between the operative or conservative methods of treatment could be made without difficulty; but, as this is impossible, we believe that operative measures which give a more definite opportunity than does enterostomy of detecting and removing the trouble should be adopted as a rule, except in those cases mentioned by Dr. Curtis in which there is present such a poor condition of the patient as to render recovery from the shock of operation an improbable result. The overdistension of the intestine can be relieved as well during the performance of laparotomy as by enterostomy, and but few who understand what the latter involves would prefer it to the former, even though the risk be somewhat less, if the promise of a speedy closure of the fistula could not be given them.

As by far the greater number of fatal cases were those in which the cause of death is ascribed to "poor condition of the patient," the recommendation to lose no time in deciding upon the course of treatment to be followed is an especially sound piece of advice, and we trust that in the records of the next series of cases this cause of death will occupy a much less prominent position in the mortality section. Delay is the curse of surgery; and until the surgeon and patient—especially the latter, as ignorance, lack of confidence, or the advice of well-meaning but misguided friends is the usual cause of the delay which gives to many capital operations a percentage of mortality which is far from just—understand that the old proverb, "a stitch in time saves nine," applies equally as well to the repair of a bodily injury or disease as to a rip in the seam of a pair of trousers, every capital operation will be handicapped by an unnecessary and unjustly imposed death-rate in its race for place among the recognized resources of surgical science.

MINOR PARAGRAPHS.

POISONING BY ATROPINE.

DR. LLEWELLYN ELLIOT, in the "Journal of the American Medical Association," gives the history of a case of atropine poisoning in which four grains of the drug were taken into the stomach by mistake. Within half an hour all the symptoms ordinarily produced by the drug were present, and no medical aid was had until the lapse of an hour after the poison was swallowed. Active delirium and violent jactitations were prominent symptoms at the time Dr. Elliot reached his patient. One grain and a third of sulphate of morphine was given hypodermatically in divided doses during eighty minutes' time, causing contraction of the pupils, a reduction in frequency of the respirations, and profound sleep. A strong decoction of coffee was then given *per rectum*, as well as citrate of caffeine hypodermatically, at intervals of an hour, until the patient had ceased to show evidences of profound narcosis. Complete recovery ensued. Dr. Elliot has collected thirty-two cases of atropine poisoning, in only two of which a fatal result occurred, one being that of a child who took more than half a grain, and the other that of a woman who swallowed about three grains of the alkaloid. He advocates the heroic use of hypodermatic injections of morphine, at intervals of twenty minutes or half an hour, until the effects of the drug are manifested in the treatment of atropine poisoning, believing that it is the best practice to substitute morphine narcosis for that caused by

atropine; as it can be antagonized by the administration of physiological antidotes during its development.

SLAG AS AN ABSORBENT AND DEODORIZER OF EXCRETA.

AN account of the employment of crushed slag as the absorbing and deodorizing material for earth-closets has been published in the "Lancet." It is said to be greatly superior to dry earth for this purpose, both on account of its extreme porosity, which makes the use of a smaller quantity of material possible, and from its value as a fertilizer, which is vastly increased after it has been used in the manner suggested. It is cheap, the supply is plentiful, and the material can subsequently be utilized as manure. Its use, as well as that of dry earth, as opposed to the system of water-carriage, in dealing with the sewage of large towns, would apparently solve a most difficult problem; but the question of how this use can be made practicable and convenient constitutes a most formidable lion in the path leading to sanitary perfection.

HYDROGEN PEROXIDE AS A GERMICIDE.

DR. GIFFORD, in the "Medical Record," relates his observations in regard to the germicidal action of this agent. He believes that although the fresh "fifteen-volume" solution (containing about three per cent. of the peroxide) is a most efficient and rapidly acting germicide, it is far from acting as such in some of the weaker solutions which have been recommended. He also believes that the ebullition noticed when the drug is used and which is due to the liberation of oxygen is no criterion as to the extent of the germicidal action. He considers this to be due, not to the liberated ozone, but to the action of the undecomposed hydrogen peroxide, which acts in an analogous manner to phenol and mercuric chloride, by direct poisonous effect on the germs. The ebullition increases the cleansing power of the solution by mechanical action, but the escaping oxygen or ozone has no germicidal influence except by favoring the access of the undecomposed peroxide to germs protected by secretions.

"THE FLY AS A CARRIER OF DISEASE."

* UNDER this heading the "Medical Record" alludes editorially to the observations of Dr. Giuseppe Alessi in his investigations as to the ability of the common house-fly to act as a means for the conveyance of disease germs. If the worthy doctor is not mistaken in his conclusions, there has at last been found for this abominable and ubiquitous pest some other *raison d'être* than that of acting as a destroyer of human comfort and morals. A well-known physician, a professor in one of our medical schools, was asked by one of his pupils to explain the physiological function of Peyer's patches, and replied: "How could one have typhoid fever without them?" The domestic fly, then, may be associated with Peyer's patches in the practical demonstration of the theory of Malthus—at least to as great an extent as this can be demonstrated without the active collaboration of the rising generation.

ANTIPIRYNE AND ITS USES.

DR. H. B. BASHORE, in the "Medical and Surgical Reporter," regards the analgesic, hæmostatic, and antipyretic effects of antipyrine as the chief benefits to be derived from its use. As an analgesic, it often serves as a substitute for morphine, especially in the cases of individuals who are intolerant of that drug; when administered during the first stage of labor, it often calms the excitement, and at the same time lessens the pain without interfering with the progress of the labor. In this case it is most effective when given hypodermatically in doses of

four grains, to be repeated after an interval of two hours when necessary. As a hæmostatic, it is employed in powder or solution as a local application, and its action is most efficient. Its antipyretic effect is not produced when antipyrine is administered in cases of malarial fever, but its use in other forms of pyrexia, in doses of from thirty to fifty grains, is followed by a reduction of the febrile temperature of from 0.9° F. to 5° F. The drug is of no value in the treatment of chronic rheumatism, but often exercises a beneficial effect when used in cases of the acute and subacute forms of that disease. Nausea, vomiting, drowsiness, erythematous patches on the skin, swelling of the tissues of the throat, profuse sweating, and collapse are mentioned as occasional effects produced by the administration of the drug, which should always be used with care.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 4, 1888:

DISEASES.	Week ending Aug. 28.		Week ending Sept. 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	37	6	35	11
Scarlet fever.....	78	22	62	9
Cerebro-spinal meningitis....	2	1	1	1
Measles.....	97	10	75	9
Diphtheria.....	59	24	75	23
Small-pox.....	0	0	0	1

The Mississippi Valley Medical Association.—The meeting which was to have taken place on the 11th, 12th, and 13th inst. has been postponed to the 25th, 26th, and 27th. This, it is stated, is in keeping with the desires of many members of the association, and in order to arrange the most liberal railroad rates.

Society Meetings for the Coming Week:

MONDAY, September 10th: New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Medicine (Section in Surgery); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore, Md., Medical Association.

TUESDAY, September 11th: New York Medical Union (private); Medical Societies of the Counties of Chemung (quarterly—Elmira) and Rensselaer, N. Y.; Mississippi Valley Medical Association (first day—St. Louis); Newark, N. J., and Trenton, N. J. (private), Medical Associations; Baltimore, Md., Gynæcological and Obstetrical Society.

WEDNESDAY, September 12th: New York Pathological Society; Medico-legal Society; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Mississippi Valley Medical Association (second day); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

THURSDAY, September 13th: Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; Mississippi Valley Medical Association (third day); South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, September 14th: New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

SATURDAY, September 15th: Clinical Society of the New York Post-graduate Medical School and Hospital.

Proceedings of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of June 8, 1888.

Dr. DA COSTA in the Chair.

Extra-uterine Pregnancy; Laparotomy and Recovery.

—Dr. C. B. PENROSE reported the histories of two cases. M. C., aged thirty-two, had had four children, the last seven years before, and two miscarriages, the last eleven years previous. She was treated for syphilis and retroversion of the uterus in 1883. She applied for treatment again on February 6, 1888. She had been bleeding profusely from the vagina for thirteen days, and had suffered with continuous sharp pain in the left side for the same length of time. The pain and bleeding had appeared suddenly after lifting a heavy weight. There were no symptoms of pregnancy. Vaginal examination revealed a small retroverted uterus, and a tender cystic mass of about the size of a duck's egg situated to the left of the fundus. Three days later this mass was again examined and found to have increased in size to that of a large orange. Laparotomy was performed February 10, 1888.

The left tube was found distended at the outer half by a cyst of the size of an orange. About three ounces of recent blood-clot was found in Douglas's pouch. The cyst was very friable and easily ruptured. During the removal a considerable quantity of old blood-clot escaped into the peritoneal cavity.

The left ovary was independent of the cyst in the left tube. The right ovary was cystic, and was removed along with the right tube.

The convalescence of this woman was uneventful. She had menstruated naturally since the operation. Three months after the operation her breasts became enlarged and painful, and she was able to squeeze milk from them. This secretion of milk lasted for two weeks, until it was stopped by the use of belladonna ointment. These mammary symptoms were the only signs of pregnancy exhibited before or after the operation, and the speaker wished to ask the members of the society whether it was not an unusual occurrence for this secretion of milk to appear at so long a time after the removal of the product of conception.

CASE II.—E. B., aged twenty-eight, had had four children, the last one a year previous. She had not menstruated since her last labor until two months before she presented herself for treatment. She then began to bleed profusely, and to suffer from great pain in the left side. For the last few weeks the bleeding had been accompanied by the discharge of shreds of membrane from the vagina.

Vaginal examination revealed the presence of a large cystic mass situated to the right of the uterus.

Laparotomy was performed May 22, 1888. To the right of and posterior to the uterus was a blood-cyst of about the size of an orange. The cyst was firmly adherent to the posterior surface of the uterus and to the right ovary and tube. The right tube opened into the cyst.

As might be seen from the specimen, this could not be called a tubal pregnancy, as could the first case, in which the tube was distended by a cyst containing the product of conception. In the second case the tube opened into this cyst. In each case there was disease of the opposite tube and ovary, the ovary being in each instance as large as a good-sized egg.

The second patient was now out of bed.

Dr. M. O'HARA said that Dr. Penrose asked with reference to the secretion of milk in the first case. He had seen one case in which milk had never appeared. The mother was believed

to have arrived at the full term of pregnancy, and the child died. Dr. O'Hara did not think belladonna had any effect in arresting the secretion of milk.

Dr. WILLIAM GOODELL said that anything producing irritation of the genito-urinary organs might cause the appearance of milk in the breasts. The presence of a fibroid tumor might even do so.

Vaginal Hysterectomy for Procidentia, with Epithelioma of the Cervix Uteri and Vagina.—Dr. WILLIAM L. TAYLOR showed a specimen. The patient had had procidentia for several years prior to the appearance of the epithelioma, with a gradual thickening of the vagina. The principal symptoms complained of were due to the occlusion of the urethra and rectum. The operation was performed to relieve these symptoms. The patient died three days after the operation.

The specimen was interesting from the fact that it showed occlusion of the cervical canal by the epitheliomatous matter. To the right side there was an opening which he thought to be the external os, through which the sound entered three inches and a half. At the operation it was found that the sound had entered the diseased mass, the uterus being in the median line. The patient's death was due largely to shock.

Perityphlitic Abscess.—Dr. JOSEPH HOFFMAN reported a case *originating in appendicitis*, showing the specimens. The patient, Mrs. B., was married, and had had three children. When first seen she had a pulse-rate of 128 and a correspondingly high range of temperature, and was unable to stir in bed without suffering from extreme pain. Careful questioning elicited the information merely that eight days previously she had slipped from a chair, causing thereby severe pain in the right iliac region. This continued up to the time at which Dr. Hoffman was summoned, when she was compelled to take to her bed.

The duration of her trouble, according to her own statement, was limited to a little more than a week's time, though in this connection she mentioned the occurrence, previous to menstruation, of an ill-smelling vaginal discharge. Examination *per vaginam* revealed the presence of a tumor situated to the right of and close to the uterus, and which, when touched, gave her much pain. The rectum was empty, as she had had a dysenteric attack on the previous day. External examination was so painful that it was not made. The pain in her back and right leg was intense. It was decided that operation was necessary, and Dr. Joseph Price was called in consultation; but, after examining her while under the influence of ether, both were somewhat uncertain as to the existing condition.

Operation being decided upon, an opening four inches in length was made in the median line of the abdomen, and an exploration made. The cæcal portion of the intestine was found to be bound down by adhesions, and was freed with much difficulty. The appendix vermiformis was almost completely buried in pelvic tissue, and the temptation was strong to remove it piece by piece, though it was afterward enucleated by persistent efforts. The cæcal portion of the bowel was almost gangrenous in spots, and was almost perforated by ulceration. Surrounding this portion of the intestine was a quantity of foetid pus—about two ounces. The pelvis was carefully washed out, no antiseptics being used; a drainage-tube was introduced into the *cul-de-sac*, and a rubber tube was made to pass from the iliac fossa through the abdominal incision, which was closed by seven deep and superficial sutures. Nothing was done with the bowel except cleansing it. The bowels were at first moved by enemata, and, after a quantity of scybala were discharged, calomel, in one-sixth of-a-grain doses, was given to clean the tongue and relieve bilious vomiting.

The patient made an uninterrupted recovery, all the stitches as well as the tubes being removed by the tenth day. The patient was then, on the twenty-fourth day after the operation, sitting up, entirely free from pain.

A curious feature of the case was that, after removal of the offending appendix, the patient, after three days' time, remarked that she had not been so free from pain at any time during the past two years, and then gave an exact history of her symptoms, all of which pointed to the existence of perityphlitis. Her pain had become so much a part of her that she did not seem to recognize it as a foreign element.

The principal points to which attention might be called were the closing of the incision and its location. Although this was central, drainage was perfect, and, though sutured, it promptly healed, showing, in the opinion of the speaker, that the dogma as to both the location and the non-closure of the incision was not sound. As in this case the central incision made it possible to remove at the same time an ovarian hæmatoma which would otherwise have been out of reach, and as perfect drainage was obtained, these points in the technique of such operations were worthy of special consideration.

As to some points bearing on the diagnosis the speaker would make no reference, leaving them to Dr. Price, who so kindly worked with him. He would only venture the opinion that in this, as in all other surgical diseases of the pelvis, absolute diagnosis was very often impossible, depending, as it did, so much upon anæmnesis, which, as in this case, was little to be relied upon.

Dr. PENROSE asked whether or not the pus was encysted around the cæcum or free in the peritoneal cavity.

Dr. HOFFMAN said that the presence of pus became evident only on reaching the cæcum.

Dr. PENROSE said that the cases in which it was proper to make the incision over the cæcum were those in which there was an encysted abscess around the cæcum or the appendix. If there was free pus in the peritoneal cavity, a median incision would probably be better.

Dr. GOODELL said that he on several occasions had been obliged to sever the appendix from its attachment in operations for the removal of ovarian tumors, and that this detachment had seemed to produce no bad effect. It seemed to be a useless appendage. He did not know that modern research had thrown any light upon its use. In removing the appendix, he simply ligated it with silk and cut it off, carefully squeezing the cut end so that no fæcal matter should remain.

Dr. JOSEPH PRICE said that a few years ago ovariologists regarded the appendix as sacred—as something that should never be touched.

The case reported was one of great interest. The woman had complained for the space of two years, her trouble evidently originating in an appendicitis. The cæcum was so much thickened and so low down in the pelvis as to suggest the existence of tubal disease. She had, however, a good history and several healthy children, the youngest being two years of age. The presence of the tortuous body on the right side determined the choice of the median incision. After opening the abdomen, the small hæmatoma was first removed. Afterward, the cæcum was dealt with. The course of the case was all that could be desired.

Dr. I. G. MORTON advised the use of a lateral incision and non-closure of the wound. As to the first of these recommendations, circumstances should influence the choice. As to the second, he did not believe in it at all. We were too far advanced in surgery to employ such a procedure.

Dr. J. V. KELLEY said that the general practitioner met with more cases of perityphlitis than did the specialist, and

that he was disappointed in not hearing more about the history of the case just reported. He was also surprised that this case was that of a woman, the disease being much more common in men. The existence of pain for a year or two would be evidence against the existence of perityphlitic abscess during that time. Perityphlitic abscess was an acute disorder and ran an acute course.

Dr. J. PRICE did not concur in the view that the course of perityphlitis was necessarily acute. He knew of a case in the practice of Dr. I. G. Morton in which the operation for the trouble was repeated at the end of a year's time, and the appendix removed. In this case the trouble was recurrent, gradually growing worse, and required a second operation.

Dr. M. O'HARA cited in substantiation of Dr. Price's view the case of his own child, in which there were two or three attacks within eleven months' time. For four or five months the child was in perfect health, although the condition (appendicitis) existed. Another attack followed, and death from septic peritonitis resulted.

Dr. M. PRICE believed that the peritonæum could tolerate the presence of large quantities of pus for a time, just as abscesses in other parts of the body were tolerated.

Dr. WILLIAM GOODELL thought that perityphlitis, like any other form of inflammation, might exist for years. He thought that Dr. Kelley had narrowed the question down too far.

Dr. HOFFMAN held that it was a mistake to believe that inflammation could not be present in these cases without the presence of a well-defined tumor. It was easy to make a diagnosis after operation, as was too often done. Many pages could have been written after this operation on the diagnosis of perityphlitis; but before operation it was impossible, because there was no definite history. There was nothing but the inflammation of the appendix which could have caused the symptoms of which she complained.

Dr. J. V. KELLEY thought that no one would diagnosticate perityphlitic abscess before the presence of a tumor was recognized. The pericæcal tumors underwent resolution spontaneously and abscesses did not form.

Dr. J. B. DEEVER made a distinction between appendicitis and perityphlitis, and believed that very few cases of inflammation about the appendix underwent resolution.

Dr. G. M. SHOEMAKER cited a case the history of which he thought proved that a termination by resolution occurred in one such case.

Dr. WILLIAM GOODELL presented a **Specimen of Oviducts and Ovaries, the Diseased Condition being caused by Gonorrhœal Infection.**

The ovaries were enlarged by cystic and interstitial degeneration. The mesosalpinx was entirely absorbed, the fimbriated extremities of the oviducts were enlarged by a cluster of cysts, and the adhesions to the broad ligaments were firm.

The history as to the infection was a clear one. The husband had a gleet, and, directly after marriage, the wife's health began to fail, her symptoms consisting of pain in the groin and reflex neuroses of a high grade. By vaginal examination the concurrent implication of the oviducts and ovaries was very manifest, as both organs were readily distinguished from each other. The patient recovered without mishap.

Dr. Goodell also exhibited a solid ovarian tumor of suspected malignant character. The girl from whom he had removed it was only sixteen years of age. It had grown very rapidly since its presence was first discovered a year and a half before. Its weight was six pounds, and for its removal required an incision nearly twelve inches in length. The pedicle was very broad, and some ascitic fluid was present. This patient was also doing well.

Dr. Goodell also showed a fibroid tumor of the uterus weighing eighteen pounds. A rapid accumulation of ascitic fluid rendered the performance of the operation imperative. On account of the pressure upon the diaphragm the patient was anæsthetized in the sitting position, and it was only after removal of the fluid that she could be safely placed in the recumbent position. The incision needed for the removal of the tumor was very long. The pedicle was treated extra-peritoneally by the use of Kœberlé's wire clamp. Thus far all the symptoms had been favorable, but, as only forty-eight hours had elapsed since the operation, the patient was not yet out of danger.

Dr. J. PRICE was glad to hear Dr. Goodell say that operation was the only treatment for such cases. He never operated simply for relief of nervous symptoms, but only when actual disease existed.

Dr. PENROSE showed specimens of diseased ovaries and tubes removed from a patient who had been treated for several months in 1884 for chronic cellulitis by the usual applications. She was married and had two children—the last born five years before. In 1886 she returned for treatment. Diagnosis: cyst of left ovary and tube. She was again treated by the common applications. In 1888, one week before, she returned for treatment, and pyosalpinx was diagnosticated. The tubes and ovaries were found in the hollow of the sacrum. The left ovary contained one drachm of purulent matter.

Book Notices

The Rules of Aseptic and Antiseptic Surgery. A Practical Treatise for the Use of Students and the General Practitioner. By ARPAD G. GERSTER, M. D., Professor of Surgery in the New York Polyclinic; Visiting Surgeon to Mount Sinai Hospital and the German Hospital, New York. Illustrated with Two Hundred and Forty-eight Engravings and Three Chromo-lithographic Plates. New York: D. Appleton & Company, 1888. Pp. 11-332. [Price, \$5.]

THE author in his preface announces that "the object of this volume is a systematic yet practical presentation of the Listerian principle." He does not aim at "the inclusion of all the disciplines of surgery," his leading idea being "to illustrate the incisive practical changes that the adoption of aseptic and antiseptic methods has wrought in surgical therapy." The introduction of "pathological and technical diversions" is only "for the sake of laying a rational foundation to the principles composing the essence of antiparasitic surgery," whose principles and practice he hopes "to somewhat propagate and popularize." The work is divided into five parts: 1. Asepsis. 2. Antiseptics. 3. Tuberculosis. 4. Gonorrhœa. 5. Syphilis. Under asepsis, after a definition of the term, the author shows how it is to be preserved, and gives the rules of surgical cleanliness, the various dressings employed, and the method of their application under all circumstances for either temporary or definitive relief. Then follows a long but exceedingly valuable chapter on the special applications of the method—a chapter full of interest and instruction for all practical surgeons, giving not only the general principles of surgical technique, including sutures, drainage, etc., but also their application to diverse organs and regions. One only regrets that still further space was not devoted to this chapter and the subject more exhaustively treated.

Part II, treating of antiseptics, is to be particularly com-

mended for its full and clear account of the natural history of idiopathic suppuration, that great stumbling-block in antiseptic pathology to so many of our surgical teachers. The difference between the micro-organisms of suppuration and putrefaction is made evident, and a concise account of the life history of the former given, showing how infection occurs, develops, and spreads in the organism. The chapter closes with the diagnosis and treatment of the resulting phlegmon, its occurrence in the various regions being well illustrated by the narration of cases and by photographs, and a few words on erysipelas and pseudo-erysipelas. The three following chapters—on tuberculosis, gonorrhœa, and syphilis—while excellent in every particular, are too concise, particularly the one on tuberculosis. It is to be hoped that in the next edition, which must soon follow, the author will elaborate these subjects more.

The work, as a whole, is a particularly valuable one to all interested in surgical procedures. The author's careful training and extended experience, which have been most skillfully utilized, render him a most valuable teacher. The illustrations are very numerous and well executed, a few only lacking in definition.

The Modern Treatment of Stone in the Bladder by Litholapaxy. A Description of the Operation and Instruments, with Cases illustrative of the Difficulties and Complications met with. By P. J. FREYER, M. D., M. Ch., Bengal Medical Service. London: J. & A. Churchill, 1886. Pp. 116.

THE aim of this work is to place before the profession "a guide to the modern treatment of stone by litholapaxy of a thoroughly practical nature." In so doing the author carefully describes and gives the history of the operation and instruments employed, and ably illustrates, by cases selected from a large experience, the difficulties and complications met with and how they should be overcome. He also proposes a new method of diagnosis by means of an "aspirator-cannula," which has proved valuable to him in the detection of small calculi in misshapen bladders and available not infrequently for their removal. Although meeting with a large number of stone cases, he was for a long time deterred from attempting the new operation by the depreciative criticisms of Sir Henry Thompson upon its introduction by Bigelow, and only finally decided upon giving it a trial when he learned of the former's brilliant successes with it. A valuable summary of the one hundred and twenty-eight cases of operation by the author is given, and a few illustrative cases are described in detail. The practical conclusions drawn from this well-digested experience may be summarized as follows: Litholapaxy is the operation in adults of both sexes, except in a few cases where either the unusual size or hardness of the stone or excessive pathological deformities of the bladder or urethra complicate the case. For children, the cutting operation is to be preferred. This monograph deserves the most hearty commendation.

The Ethics of Marriage. By H. S. POMEROY, M. D., Boston. With a Prefatory Note by THOMAS ADDIS EMMET, M. D., LL. D., New York, and an Introduction by Rev. J. T. DURYEA, D. D., of Boston. Also with an Appendix showing the Laws of most of the States and Territories regarding Certain Forms of Crime. New York: Funk & Wagnalls, 1888. Pp. xxxi-33 to 197.

IN frank but judicious phrase, addressed rather to the public than to the profession, the author raises his voice against the too prevalent crime of abortion. Few physicians need to be told how common this malpractice is, even among those who are supposed to constitute the most refined class in the community; none but the blind can overlook the scarcely covert ad-

vertisements of abortionists which disgrace the columns of professedly reputable newspapers. But utterances like this and the more vigorous protest of Storer are not likely to reach—and if so would hardly influence—the willful sinners for whom they are intended. When woman in wedlock stifles the maternal instinct and seeks the death of her off-spring, her ears are closed to arguments against her self-indulgence. Persuasion is wasted, and the secrecy of her evil doing usually enables her to laugh at the penalties prescribed by laws which it is seldom attempted to enforce, even upon her most notorious accomplices.

BOOKS AND PAMPHLETS RECEIVED.

Chronic Pyelitis successfully treated by Kolpo-uretero-cystotomy, Irrigation of the Pelvis of the Kidney, and Intra-vaginal Drainage. By Nathan Bozeman, M. D., Surgeon to the Woman's Hospital in the State of New York. [Reprinted from the "American Journal of the Medical Sciences."]

The Gradual Preparatory Treatment of the Complications of Urinary and Fæcal Fistula in Women, including a Special Consideration of the Treatment of Pyelitis by a New Method, and the Prevention of the Evils of the Incontinency of the Urine by a New System of Drainage. By Nathan Bozeman, M. D., etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Conditions rendering Diagnosis Difficult in Pelvic and Abdominal Diseases. With Illustrative Cases. Including an Oral Report on an Ovarian Tumor, with Discussions. By T. B. Harvey, M. D., LL. D., etc., Indianapolis.

Announcement for 1888-1889 of the Medical and Dental Departments of the National University, Washington, D. C.

The Treatment of Acne. By B. Merrill Ricketts, M. D., Cincinnati, Ohio. [Reprinted from the "Medical Register."]

Heredity. By James Searcy, of Tuscaloosa. Junior Counselor of the Medical Association of the State of Alabama. [Reprinted from the "Transactions."]

The Electro-magnet in the Removal of Steel from the Interior of the Eye. By Alvin A. Hubbell, M. D., etc., Buffalo, N. Y. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Probemittagbrod oder Probefrühstück. Aus der städtischen Frauen-siechenanstalt zu Berlin. Von Dr. Max Einhorn, aus New York. [Separat-Abdr. aus "Berliner klin. Wochenschrift," 1888, No. 32.]

Reports on the Progress of Medicine.

PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

Experimental Researches showing the Influence of Gravitation on the Motor Centers.—M. Brown-Séquard ("Comp. rend. de l'acad. des sci.," No. 23, 1888), in nine experiments out of thirty, found that a stimulus applied to a given part in the motor region of one half of the encephalon provoked movements either in the opposite or the same side of the body, according to the position of the animal on the flank corresponding to the region stimulated, or on the one opposite to this. If the animal lay directly on its back, the movements occurred sometimes on the opposite side, sometimes on the same side as that which was stimulated, but the anterior limb was usually moved by a stimulus applied on the opposite side of the head, and the posterior limb by one applied on the same side, though sometimes the reverse was the case. However irregular the movements provoked may be, the author states that there can be no doubt that—1. The difference of manifestation depends entirely upon gravitation; that is, the position of the head. 2. The motor zone of each hemisphere is capable of producing movements in the four limbs of the animal, and not in the limbs opposite only, as has been generally supposed. Having established artificially the conditions produced by gravitation by cutting the cervical sympathetic, and thus causing hyperæmia of one hemisphere, it

was found in two out of a number of cases that a stimulus applied to the hyperæmic hemisphere caused movements in the limbs opposite to those produced by an irritation applied to the same point previous to the section of the sympathetic.

The basal ganglia, the internal capsule, etc., were found to be influenced by gravitation in the same manner as the cortex. The author also alleges that a large number of experiments led him to believe that the anterior pyramids are in no way necessary for the transmission of motor impulses proceeding from any part of the brain. Complete sections through both anterior pyramids were made, but irritation of the parts in front of and above the section gave the same results as when the medulla was intact.

Experiments on the Motor Functions of the Brain (Presented by Brown-Séquard).—Eugène Dupney (*ibid.*) has noticed since 1873 that an electrical stimulus applied to a portion of the dura in the parietal region of the brain in animals could bring about distinct muscular movements. The results were constant if the animal was not exsanguinated or anesthetized, the latter state being incompatible with the manifestations of animal life. His recent experiments gave the following results: A crucial section of the dura of the parietal region particularly, and the eversion of its edges, caused distinct paresis of the limbs, either opposite to or on the same side as the lesion. The motor functions of the facial muscles were markedly disturbed, and always on the same side as the lesion. The inferior eyelid was so dependent as to expose the conjunctiva, the nasal ala approached the superior lip, which was also dependent, and the median line between the lips was deviated to the opposite side. Sensibility was increased in the affected side of the face, and also in the paralyzed parts of the body. The paralysis could be removed by the application of a feeble faradaic current or by producing a similar lesion in the dura of the other hemisphere. Analogous results were obtained after producing lesions of the cerebral convolutions. The application of a feeble faradaic current to the parietal dura, which was naturally somewhat diffused over the brain by the cephalo-rachidian fluid, gave rise to muscular movements resembling closely those following the faradaic stimulation of the psycho-motor centers described by Fritsch, Hitzig, and Ferrier, or of the surface of section of the internal capsule described by others. That the affection should cease when the site of the lesion is stimulated, or as soon as a similar lesion is made on the opposite side, the author says, is difficult to understand. He thinks that the knowledge of the present time can hardly be said to explain the mode of production of movements in the brain, or the origin of cerebral paralysis.

Compensatory Hypertrophy of the Suprarenal Capsules.—M. H. Stilling ("Revue de méd.," No. 6, 1888) performed fourteen experiments on rabbits by extirpating one of these glands or by cutting off its blood-supply. After a lapse of several weeks the remaining capsule was found to have lost its normal aspect, and to have undergone considerable hypertrophy. One of the rabbits, which was deprived of its left gland, presented at the post-mortem examination the following conditions: In front of the vena cava was found a yellowish body with an irregular surface, corresponding to the inferior extremity of the right suprarenal capsule. It was an accessory gland and weighed 0.03 gramme. The right suprarenal capsule itself was decidedly hypertrophied, as compared with one taken from a healthy rabbit of equal size and weight. It weighed 0.41 gramme, whereas that taken from the healthy animal weighed only 0.25 gramme. As the organs vary in weight under physiological conditions, the author took care to compare the hypertrophied capsules with those taken from healthy rabbits of the same weight, and which had been kept under the same conditions as those operated upon. The author believes that these microscopical and physical changes in one capsule after the removal of its fellow indicate that these glands have an important function in the organism.

The Length of Time needed for Substances to appear in the Blood after their Administration by the Stomach or Subcutaneously.—MM. Grehant and Quinquaud ("Comp. rend. hebdom. des séances de la soc. de biol.," No. 28, 1888), in determining this question, used solutions of the iodide and salicylate of soda. The conclusions are, from their experiments on dogs, that the presence of salicylate of soda in the blood can be shown within thirty-one minutes after an injection of a six-gramme dose subcutaneously, or directly into the stomach. In the case

of iodide of sodium a seven-gramme dose was needed to cause its appearance in the blood within the same length of time if it was given by the stomach; but when given subcutaneously and in about half the foregoing dose, it appeared in the blood after a lapse of eight minutes only. The authors also remark that after the injection of two grammes of iodide of sodium into the stomach no trace of this salt could be detected in the blood.

On the Secretory Fibers of the Sympathetic supplying the Parotid.—J. N. Langley ("Jour. of Phys.," March, 1888) remarks that it is usually said that the parotid receives trophic but no secretory nerve fibers from the cervical sympathetic, because its stimulation rarely excites any secretion. The author found, however, that stimulation of the sympathetic was always followed by secretion by the parotid, if the gland was previously prepared to secrete. Or, in other words, the sympathetic secretory fibers are non-effective unless the gland has been supplied with a considerable amount of oxygen. The gland never failed in the author's hands to respond to sympathetic stimulation if it was previously prepared to do so by irritation of the chorda tympani, especially if a small dose of atropine sulphate had been injected into a vein. The relations of the submaxillary and sublingual glands to their cerebral and sympathetic nerves were found to be of a nature similar to the foregoing.

The Influence of Organic Temperature on the Convulsions caused by Cocaine (Presented by A. Richet).—MM. P. Langlois and Ch. Riche ("Comp. rend. de l'acad. des sci.," No. 23, 1888) experimented on dogs exclusively, performing intravenous injections of a solution of cocaine hydrochloride. The effects produced were first a general rise of the body temperature; then convulsions supervened, resembling closely epileptiform attacks. The dose needed to produce convulsions varied greatly. The authors maintain that they were the first to determine that this dose is an amount in inverse ratio to the temperature of the animal. A dog which had had an injection and did not show any tendency to convulsions, as soon as the body temperature was elevated by the administration of a warm bath had a second injection without having manifested a distinct epileptiform attack. It is evident, the authors say, that the elevation of the organic temperature renders an animal more and more apt to have convulsions by increasing the toxic action of the poison on the nervous system; and the convulsions in their turn raise the temperature, and thus hasten a fatal issue by stopping the heart's action and the respiration. The only way to interrupt this vicious circle is to employ refrigerants. The same conditions, they further suppose, are probably present in many diseases in which the auto-intoxications play such an important rôle. The febrile temperature increases the organic sensibility to the poison, the poisoning of the organism is itself the cause of the elevation of the temperature, and refrigeration seems to be the only general method which is likely to diminish the effects of toxic agents which cause convulsions.

On the Influence of Antipyretics, and particularly of Antipyrine, on the Amount of Glycogen in the Liver (Presented by Brown-Séquard).—MM. Lépine and Porteret (*ibid.*) experimented on rabbits exclusively, and found that the administration of antipyretics (and they used antipyrine principally) decidedly increases the amount of the hepatic glycogen and diminishes that of the hepatic sugar. The antipyretics, they state, are obstacles to the transformation of glycogen into sugar, and the fact seems to be in perfect harmony with the recent work of Chauveau on the consumption of glycogen and the production of heat. The checking of the transformation of glycogen into sugar they ascribe to a nervous influence, although they witnessed in their experiments some influence on the hepatic parenchyma.

The Influence of Temperature on the Dissociation of Oxyhæmoglobin.—Dr. Léon Brasse (*ibid.*) experimented during two years in this direction, and gives the following results: 1. The value of the tension under which the oxygen is held in union is infinitely small at a temperature of 0° C. (32° F.). At this temperature the oxyhæmoglobin is in a condition of considerable stability, does not allow of any dissociation of oxygen in an airless space, and scarcely gives up any oxygen to the living tissues which it bathes. As is well known, in warm-blooded animals, with an artificially reduced temperature, the blood is red in the veins as well as in the arteries. 2. The tension of dissociation grows higher as the temperature is raised, while the stability of the

oxyhæmoglobin decreases, the latter being formed in proportion to the superiority of the tension of the atmospheric oxygen to that of dissociation. The foregoing statements are sustained by the fact that in a cold-blooded animal placed in a bath of warm water the venous blood is black, as it is in warm-blooded animals, and *vice versa*. The same truth is evident from Paul Bert's experiment of maintaining an animal's life, the temperature of which was reduced 20° C. (36° F.) below the normal standard during the experiment, the animal being placed in a confined air chamber at a very low temperature, and hence breathing an atmosphere which would be entirely irrespirable by an animal with a normal temperature. 3. Since the tension of dissociation of the oxyhæmoglobin increases with the temperature, there must be a moment when it will equal the tension of the atmospheric oxygen, and at that time the formation of oxyhæmoglobin must be interfered with. This is the case in hyperpyrexia. Animals die when the temperature of their blood reaches 45° C. (113° F.), and analysis is unable to detect any oxygen in this blood. In hyperpyrexia the tension of the oxyhæmoglobin increases, but a smaller quantity of the inspired oxygen is utilized, which explains the frequent and shallow respirations which provide less than the normal quantity of oxygen, and corresponds with the fact that the total oxidation of the body in hyperpyrexia is lowered, as has been observed by various authors. The tension of dissociation of the oxyhæmoglobin is the same for a given temperature in any animal. The author further explains the fact of a bird's life being possible at its normal temperature of 45° C. (113° F.).

On the Recent Perfection of the Method of Counting the Red and White Blood Corpuscles.—Professor Mayet ("Arch. de phys. norm. et pathol.," No. 5, 1888) has invented a new solution for the use of Hayem and Malassez's apparatus for counting the blood-cells. The objections which he makes to the solutions now used are that they do not distribute the elements uniformly, that some of the red cells become altered so as to greatly resemble granular leucocytes, and that the solutions themselves become quickly altered. The author makes his solution for Hayem's hæmocytometer as follows: Five hundred cubic millimetres of a one-in-one-hundred solution of osmic acid, the density of which is 1.006, are mixed with four cubic millimetres of the blood to be examined, and the mixture is set aside for two minutes to allow the solution to react upon the elements, which are thus rendered apt to fix coloring substances. Then he adds 500 cubic millimetres of a solution with a density of 1.162, composed of 55 cubic centimetres of distilled water, 45 cubic centimetres of pure glycerin, and 17 cubic centimetres of a one-to-one-hundred solution of eosine. The mixture is to be well stirred.

The result of this process is that the serum acquires a density of 1.084, which favors a perfectly uniform distribution of the elements, and that the eosine stains the red cells very quickly, the leucocytes undergoing only an exceedingly slight change in color. This facilitates the counting of the cells, since they are differently colored and their natural shape is preserved. The author takes four instead of two cubic millimetres of blood, which accounts for doubling of the quantity of serum indicated by Hayem.

On the Development of the Red Corpuscles of the Blood (Presented by M. de Lacaze-Duthiers).—L. Cuénot ("Comp. rend. de l'acad. des sci.," No. 10, 1888) observed in the spleen of the inferior vertebrates two kinds of nuclei surrounded by a thin protoplasmic layer. Those which measure from ten to sixteen millimetres are developed into leucocytes; they leave the spleen and enter the general circulation as soon as they have acquired an amœboid movement. The nuclei, measuring from eight to ten millimetres in diameter, and which are more refrangent than the former, enter the general circulation as such, and are ultimately transformed into red blood-cells. Never does a leucocyte nucleus, asserts the author, develop into a red blood-cell. From the red-cell nucleus which has left the spleen, secondary nuclei, about ten in number, spring. These are ultimately detached from the main nucleus, and fall into the general cellular cavity, where they are in a state of constant irregular movement. They are seen to disappear with the beginning of the hæmoglobin secretion in the formerly colorless cell. They disappear completely when the cell and its main nucleus reach the mature state. The main nucleus, the author says, thus

shares to a large extent in the formation of hæmoglobin; and in the mammalia, though the red cells are developed entirely in the spleen on account of the difference in the anatomical disposition, and the main nucleus, instead of persisting, is entirely dissolved during the generation of hæmoglobin (which makes the only difference), in the main the process of evolution is morphologically the same.

Variations of the Activity of the Reduction of Oxyhæmoglobin in Men in Health and Disease (Presented by Brown-Séquard).—M. A. Hénacque (*ibid.*) made observations of 370 individuals, and found that physical agents decidedly modify the activity of the reduction of oxyhæmoglobin. It is reduced to one third of the normal amount in a part acted on by an application of ice, but afterward reacts to three times the physiological activity. Normally it is feebler in the morning, attains its maximum at the time of meals and in the two hours subsequent, and during muscular exercise; it is diminished toward the evening and after muscular fatigue. The diminution of the activity of reduction in disease usually goes hand in hand with the diminution in the quantity of oxyhæmoglobin, as in the cachexias, phthisis, etc., and generally in other diseases in which the nutrition is poor. In chlorosis and anæmia, with an equal quantity of oxyhæmoglobin present, the activity of reduction is less in the former. Diabetic patients regularly present a noticeable diminution of that activity, and in epilepsy it is lowered without relation to the quantity of oxyhæmoglobin.

In typhoid fever both the activity of reduction and the quantity of oxyhæmoglobin are diminished at the outset, but they return toward the normal amount when convalescence is established.

Comparative Experiments on the Elementary Respiration of the Blood and the Tissues (Presented by A. Milne-Edwards).—MM. Grehan and Quinquaud (*ibid.*) agree with Spallanzoni and Paul Bert, as regards their general statements, that a given weight of blood absorbs less oxygen than an equal weight of muscle. But the authors made a further minute investigation on this subject, and the following are their results: Into a retort holding 100 cubic centimetres of air 25 cubic centimetres of blood were introduced, and the gases furnished by the air and blood were quickly pumped out. The same experiment was repeated, but the retort, with the blood as before, was agitated in a bath at 40° C. (104° F.) for from one to three hours. The gases liberated were extracted again, and the analysis showed a difference between the oxygen absorbed and the carbon dioxide set free in the two experiments which was expressed in tenths of a cubic centimetre. When 20 grammes of fresh muscle were added to the blood, and the whole was treated as in the second experiment, the analysis of the extracted gases showed the presence of 7 cubic centimetres of carbon dioxide after the first hour, and nearly double that quantity after the second hour. The blood became black, but it did not change color under the same conditions when no muscle was present. It follows, the authors say, that the blood is but a carrier of oxygen, and the blood-cells scarcely respire at all.

On the Relation between the Atomicity of Inorganic Elements and their Biological Action (Presented by Brown-Séquard).—M. J. Blake (*ibid.*) states that the higher the atomicity of a given salt, the more extensive is its biological action, and also the higher are the centers affected by it. The monoatomic elements injected intravenously in physiological doses affect usually the pulmonary arteries, without causing any marked reaction on the higher nervous centers. Even when injected into the carotid and thus enabling these elements to reach the nervous centers in a considerably concentrated state, their presence does not interfere at all either with the action of the brain, the medulla, or the spinal cord. The author's *résumé* is as follows: The monatomic elements act on the pulmonary arteries; the biatomic, on the vomiting centers and on the voluntary and cardiac muscles; the triatomic, on the respiratory, vasomotor, and inhibitory centers, the cardiac ganglia, and the pulmonary arteries; the tetraatomic elements act on the respiratory, vaso-motor, and inhibitory centers, on the brain, the spinal cord, the cardiac ganglia, and the pulmonary arteries.

The Role of the Bile in the Digestion of Fats, observed through a Cholecysto-Intestinal Fistula (Presented by Brown-Séquard).—M. A. Dastre (*ibid.*) demonstrated some years ago the error of the assertion by some physicians and physiologists that the penetration of the bile into the stomach may be a cause of grave gastric disturbance. The

digestion of fats is attributed, after Claude Bernard, to the pancreatic secretion, to the exclusion of the bile. *In vitro*, the author states, the former is apt to emulsify and digest that class of foods, and *in vivo* the digestive organs of the rabbit furnish identical arguments. In this animal the pancreatic duct opens 35 centimetres below the choleductus; in the interval between the two openings the bile only acts on the food; and if fat be ingested it is not emulsified at that point and the lacteals of that region remain nearly clear, whereas they at once become opaque below the pancreatic duct. The author made in dogs cholecysto-intestinal fistulæ which opened into the small intestine at from 50 and 60 centimetres to one metre below the pancreatic opening. Two of the animals were kept alive for about four months, thus proving that they possessed normal digestive functions. A copious meal including fats was given to them before they were killed. At the post-mortem examination the lacteals above the opening of the fistula were almost clear, but were cloudy below it. This pointed to the fact, in the author's opinion, that scarcely any fat was absorbed by that portion of the digestive tract in which the pancreatic juice alone acted on the food. The author concludes that, although two extremes are seen in these cases of the rabbit and the dogs, we must admit that the pancreatic secretion as well as the bile are, if alone, equally powerless to effect the digestion and absorption of fats; that they must both act on the food in order that the perfect digestion of fats may occur, the pancreatic juice seeming to split up the fatty matters, and the bile seeming to contribute more to the process of their absorption. The absence of either fluid interferes considerably with the normal absorption of fats.

On the Excitability of the Gray Substance of the Cerebral Cortex when subjected to Experimental Irritation.—Dr. João Paulo de Carbalho (*ibid.*) states that he, observing that the question as to the experimental excitability or non-excitability of the cerebral gray substance had not been as yet decided, attempted to solve the problem in the following manner: In several dogs the excito-motor zones of both hemispheres were exposed, with the exercise of all known precautions; a feeble faradaic current, scarcely perceptible on the point of the tongue, was then applied to the brain-surface, which was still covered by the pia. Crossed movement of the four limbs resulted. Then a given area on the brain-surface was chosen, and the movements which followed the application of a current of a given intensity were carefully noted. A piece of cotton soaked in a five-per-cent. solution of cocaine hydrochloride was then applied to this area for from five to ten minutes, care being taken to avoid the diffusion of the solution. The same current as before was re-applied to this area, and no movements could be provoked.

The deeper layers of the same area as far down as the white substance were next tested for excitability, and reacted perfectly. Excitation of the other hemisphere gave the same results. After these experiments Dr. Carbalho thinks that there can be no doubt that the cortical gray substance of the brain is decidedly irritable.

The Structure of the Spleen, and the Destruction of the Red Blood Corpuscles in its Interior.—Dr. J. Denys ("Bull. de l'acad. roy. de méd. de Belgique," No. 3, 1888) alleges that he has made a discovery in regard to the structure of the spleen. He says that the pulp of that gland consists entirely of a cavernous capillary system, and that the circulation is not interrupted in passing from the capillaries to the veins. The author's work is criticised in the same number of the journal, page 221, where it is said that it does not seem to be really a discovery, since Billroth, Schweigger-Seidel, Gray, Kylber, Wedl, etc., established the same fact.

In accordance with the views of Neumann, but against those of Fincke, who supposes that the red cells enter the leucocytes in the spleen and there suffer disintegration, the author states that it is not possible to see any red cells englobed in the leucocytes in the cavernous capillary system of the pulp; that the red globules are there in great number and in different stages of disintegration; that their number varies according to the activity of the digestive organs.

He used two methods to prove the presence of the red cells in the gland: 1. The method of dissociation by indifferent liquids. 2. The method of coloring by fuchsin. The former was especially useful if the cells were nucleated. The formation of pigment in the spleen, the author states, is accomplished in two stages. The first one is when the

hæmoglobin and allied matters leave the red cells to be dissolved in the blood serum. In the second, the hæmoglobin is absorbed and decomposed in the endothelial cells of the cavernous system, and also in some globular cells which are not leucocytes but hypertrophied endothelial cells. The pigmentation of the endothelial cells the author believes to be analogous to what he has observed in the living connective tissue when injected with hæmoglobin, and that it is also suggested by the facts related by Neumann in his work on the formation of the pigment in a hæmorrhagic focus. In both cases the connective tissue-cells give the characteristic reaction of iron by hydrochloride of ammonia.

The peculiar disposition of the vessels of the spleen is thought by the author to favor the destruction of the red cells. He supposes, finally, that the hæmoglobin, after being dissolved in the serum, goes in part to the liver as a source of the bile pigment.

On the Action of the Nerves which Dilate the Pupil.—Dr. W. H. Gaskell ("Jour. of Phys.," March, 1888) remarks that there are three views on this subject: 1. The usual explanation of the dilatation of the pupil is that there are motor fibers in the cervical splanchnic nerve supplying a special dilating muscle. 2. Gruenhagen seeks the cause in the constriction of the blood-vessels of the iris. The author's suggestion is that the cervical splanchnic is the inhibitory nerve of the sphincter, the latter being normally in a condition of tonic contraction. The author, together with Mr. Langley, was enabled to prove the truth of the last-named view by studying the reactionary effect following stimulation of the splanchnic nerve. The right cervical splanchnic nerve of a cat was severed, and with each stimulation of the peripheral end a decided dilatation of the corresponding pupil followed. The animal's head was then cut off, when the right pupil contracted moderately, while the left was in a state of extreme dilatation. To avoid the influence of post-mortem changes, should any occur, along the track of the ocular nerve, the author removed the brain and its nerves. The pupils were kept under observation for three days. The long and short diameters of the right pupil were 7 and 4.5 millimetres respectively for the first day, while those of the left were 11 and 13 millimetres. By the third day both pupils were the same. The marked after-contraction of the sphincter muscle consequent on a series of stimulations of the cervical splanchnic, the author states, can only be explained by admitting the inhibitory action of this nerve on the splanchnic muscle.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M.D.

The Development of the Nasal Duct in Man.—Ewetsky (*ibid.*) draws the following conclusions from his investigations on the subject: 1. The development of the nasal duct begins at about the end of the fifth or the beginning of the sixth week of foetal life. 2. The development of the duct follows about the same course as it does in the other vertebrates. 3. A marked difference exists in the form which the canal assumes during the first period of development in man and that which it assumes in the other mammalia.

The Retinal Circulation, especially the Pulsation of the Retinal Arteries, in Diseases of the General System.—Schmall (*ibid.*) agrees with Donders in regard to the venous pulsation, that the increased pressure with which the blood circulates in the arteries of the body during the contraction of the heart depends partly upon the vitreous, before it has been propagated through the veins into the capillaries and the veins have become compressed.

The places in which the lateral blood-pressure is weakest are first compressed. In diseases of the heart we meet in the eye with embolism of the central artery of the retina or of its branches; with septic retinitis dependent upon a supposed more or less infectious capillary embolism; with changes in the caliber of the veins and arteries, and in their color; and, finally, with abnormal phenomena of pulsation in the retinal arteries. In cases marked by great cyanosis of the skin, particularly in congenital diseases of the right side of the heart, in congenital abnormal communication between the right and left sides of the heart, and in marked valvular defects, a pronounced venous hyperæmia has sometimes been observed in the right fundus of the eye, though this is by no means usually the case. Schmall has never seen

an increase in the difference in caliber of retinal veins and arteries in cases of non-compensatory cardiac failure, and finds the explanation of this in the venous turgidity of the abdominal organs, notably the liver, which is found in these cases. In this same class of cases, however, he has often met with marked anæmia of the retinal arteries. In regard to the changes said to have been observed in the retinal vessels during the course of long-continued fevers, Schmall thinks that the views of Jaeger in regard to the dilatation of the retinal veins and arteries, and the relation existing between the degree of dilatation and the intensity of the fever, are faulty, and that the cases in which this dilatation exists are exceptions to the rule. The condition of the central vascular system in progressive phthisis, and the general cachexia induced by it, naturally leads to a consideration of the question of how far the retinal circulation is influenced by chronic conditions of anæmia. Schmall draws his conclusions on this point from an examination of ninety-four cases of chronic anæmia, due to chlorosis, extensive losses of blood, marked febrile disturbances, malignant growths, chronic cardiac disease, and progressive pernicious anæmia. 1. The retinal vessels often appear abnormally full in these cases. 2. When changes exist in the central vascular system, they affect in the majority of cases both arteries and veins alike; in a small minority of cases the arteries and veins are affected in a different manner the one from the other. 3. An analogous change of the central vascular system appears either in a diminution in the color of both arterial and venous blood, with or without a slight lessening of the caliber of the vessels, or in a diminution in the caliber of the vessels alone, or in both together. 4. A difference in relation between arteries and veins appears very rarely in abnormal differences in color between arterial and venous blood, but more often in a difference in caliber between arteries and veins, that of the latter being increased. 5. The veins show a relative increase in caliber both with normal and contracted arteries, but are only slightly increased in tortuosity. 6. A marked tortuosity of the retinal arteries occurs more frequently in anæmic individuals than in healthy persons. No demonstrable relations exist between the increased caliber and the degree of tortuosity. 7. The changes in caliber and color of the retinal arteries do not at all affect the anæmic appearance of the patient. 8. Unilateral changes in the caliber of the retinal veins sometimes occur in patients whose anæmic condition in no wise differs from that of other anæmic patients, and is in all probability due to some local cause which influences the retinal circulation. 9. It is no more possible to develop a theoretic system for classifying these cases than it is to determine the intensity of the process and its prognosis. 10. The arterial pulsation is very frequently observed in the retina of anæmic persons. It is by no means constant in the same individual, but is sometimes wanting. 11. Increase or diminution of the arterial pulsation in the supine or sitting posture of the body has been but rarely noticed. 12. Compression of the carotid often weakens the pulsation, but never completely suppresses it. Compression of the external jugular vein produces no effect upon the pulsation. 13. A more or less marked diminution of the median arterial pressure, and consequently of the intra-ocular tension, is always present with pulsation of the retinal artery. 14. A certain increase in the rapidity of the radial pulse is not so constant. 15. The arterial pulsation has no definite connection with the tortuosity of the arteries in the retina, except that it is more apt to occur in vessels which are tortuous. 16. The arterial pulsation has no direct connection with the diminution in the formed elements of the blood. 17. The arterial pulsation does not always disappear when the anæmic condition has ceased to exist.

A New Method of Corneal Transplantation.—Von Hippel (*ibid.*) thus describes his present method of operating for the improvement of vision in leucomatous cornea: 1. The lids are opened by an elevator. In placing the trephine in position, care must be taken that the cutting edge be perfectly perpendicular to the surface of the leucoma. To attain this end it is better to fix the globe with two forceps, one externally and the other internally, so as to prevent all motion. This may be done painlessly under the influence of cocaine. Any pressure with the trephine must be avoided, both on account of the danger of bruising the tissues and that of causing a perforation. The crown of the trephine should measure four millimetres or four millimetres and a half in diameter, never more; for the larger the flap, the less are the chances

that a smooth healing process and a maintenance of transparency will result. The leucoma is to be divided as far as the membrane of Descemet, this ending the first part of the operation. 2. More or less hæmorrhage follows the withdrawal of the trephine, and is best arrested by the application of bits of absorbent cotton soaked in sublimate solution and cooled on ice. The second step consists in the careful dissection of the trephined bit of leucomatous cornea by the aid of strong, straight iris forceps with sharp teeth, and a Graefe's cataract knife. One blade of the forceps is introduced to the bottom of the wound made by the trephine, so that when the other blade is closed upon it the piece of cornea is pulled somewhat forward, which admits of the proper introduction of the knife. Keeping the flap on the stretch in this way, the piece is readily dissected free by means of the knife. This dissection is more or less interfered with by the hæmorrhage, and an assistant should carefully and continuously mop up the blood in the manner already mentioned. With the removal of the excised part of the cornea, the second part of the operation is then completed. The eye is then to be irrigated with a warm sublimate solution (1 to 5,000), the lids closed and softly pressed until the third step in the operation is begun. A piece is then cut from the cornea of a rabbit with the same trephine, the section being made through the entire thickness of the cornea, any little segment or bridge that remains being divided with fine scissors. 4. The fourth step in the operation consists in inserting the trephined bit of rabbit's cornea in the defect or hole in the leucomatous cornea. The eyelids of the patient are opened and the bit of rabbit's cornea is placed gently upon the surface of the leucoma, and slowly pushed over the edge of the hole so that no air-bubbles become confined beneath it. The piece is then softly pressed into the hole by means of the spatula. It is then dusted with iodoform, the lids are carefully closed, and a pressure bandage of antiseptic gauze is applied over both eyes. This should not be changed for three days. It is then changed every twenty-four hours, and on the sixth day the other eye is left open and the patient is allowed to get out of bed. The bandage may be removed from the affected eye on the eighth or tenth day. Slight conjunctival and ciliary injection usually appear at the end of twenty-four hours, and, when the bandage is removed, the transplanted flap appears either entirely transparent or only very slightly clouded, while the epithelium is smooth and glistening. In the course of the first week the injection of the eyeball entirely disappears, and the swelling along the margin of the wound of the leucoma subsides. At the end of the third week the healing of the flap seems to be complete. From the results of this operation von Hippel draws the following conclusions: 1. The possibility of transplanting a piece of clear cornea from the eye of a rabbit to that of a man, and of maintaining permanently the transparency of the flap, thus securing a certain amount of useful vision, has been irrefutably demonstrated. 2. The transplantation may be successfully done even in leucomata which occupy the entire thickness of the cornea. 3. Totally adherent leucomata and staphylomatous leucomata are entirely unfit for the operation, and in such cases it should not be attempted. 4. The operation is entirely safe, and occasions the patient but little pain and annoyance.

Chronic Œdema of the Eyelids in Erysipelatous Inflammation with the Development of Tumors on the Edges of the Lids.—Pedraglia and Deutschmann (*ibid.*) report a curious case of this nature in a boy aged fourteen. They think, in regard to the pathogenesis of the morbid structures, that they arose from the secretion of the Meibomian glands and from the sebaceous glands of the hair-follicles. The chronic erysipelatous affection of the lids led to a decided chronic hyperæmia of the vascular network surrounding the sebaceous glands of the lids, cilia, and skin, and consecutive hyperproduction of cellular structure and secretion, and to an exuberant development of epithelium along the edges of the lids, followed by recurrent inflammatory attacks, and the exudation of lymph-cells and fibrin in the excretory ducts of the glands. The proliferation of epithelium at the mouths of the excretory ducts of the glands caused a closure of these openings, and thus prevented the escape of their contents. As a result, the ducts became swollen, inflammatory action, with an effusion of fibrin and lymph-corpuscles, and even of blood-corpuscles, resulted, and thus the tumors were developed.

A Contribution to the Doctrine of Glaucoma.—Jacobson (*ibid.*) here discusses some of the points involved in the true pathology and patho-

genesis of glaucoma. Clinical observations and the results of iridectomy have shown that there is scarcely another disease of the eyes which shows so many varying changes as the various forms of glaucoma. Jacobson notes a distinct difference in the impression produced by palpation before and after iridectomy. The firm, spheroidal vitreous seems smaller after the operation than before it, and, he thinks, becomes smaller, firmer, and contains less water than before. The vitreous of malignant glaucoma is poor in water, and is a viscid substance of a dark-yellow color. There is in every case of acute glaucoma a diffuse opacity of the vitreous, which lasts for several weeks after iridectomy has been done. If glaucoma simplex occurs in connection with rapidly progressive myopia in a young person, the place of the normal vitreous is taken by a fluid resembling the aqueous in color and consistence, and in such abundance that the lamina cribrosa is deeply excavated and the sclerotic is greatly stretched in every direction. Comparing the loss of water from the vitreous in glaucoma simplex occurring with the disappearance of the venous stasis and its condensation in inflammatory glaucoma on the one hand, with the pathological emigration from the ciliary body and papilla, and the anatomical relations of the canal of Cloquet on the other, Jacobson draws the following conclusions:

The blood-pressure in the ciliary processes and veins as far as the ora serrata, varying continually with the movements of the pupils and with the accommodation, produces just as varying a filtration into the vitreous. The canal of Cloquet, with its opening into the central canal of the papilla, is the safety-valve for the preservation of the optic nerve against a vitreous overlaid with chorioidal infiltration. Inasmuch as every glaucomatous excavation begins at the central canal, the marginal excavation, in comparison with less peripheral excavations, should not be regarded as characteristic of glaucoma; but every excavation extending centrifugally from the central canal should be so regarded. Within certain limits, conditions of stasis in the anterior section of the chorioid may be equalized or balanced by an exit of the filtrated fluid toward the central canal of the optic papilla, by dilatation of collateral vessels, or by absorption of œdematous or even inflammatory fluids. Beyond these limits we reach permanent tissue changes, which, with increased intra-ocular tension, present an entirely different picture. Increase of tension with consecutive disturbance of function of the optic nerve and retina is no longer the cause of glaucoma, if we admit other causes of amblyopia. Glaucomatous increase of tension is the sometimes stationary, sometimes transient result of a dropsical, œdematous, or inflammatory swelling of the vitreous upon the basis of venous stasis in the chorioid. Subsequent changes of shape of the papilla occurring during the transformation from an acute into a chronic inflammatory glaucoma with diminishing, though always abnormally increased, tension, are, without exception, excavations.

As they usually begin to follow long after the intense inflammation has subsided, it is probable that they are the result of pressure and not of inflammation. There are, however, exceptional changes of form of the papilla, occurring within the first few days of the attack, which have been described as inflammatory atrophy, and which do not end in excavations. Glaucoma simplex, or watery infiltration, does not occur as glaucoma fulminans, nor is there inflammatory infiltration of the papilla after iridectomy. This fact, as well as the blindness of glaucoma fulminans with moderate excavation, is readily explained by the assumption of a communication between the anterior portion of the chorioid and the papillæ through the canal of Cloquet. Clinical experience has taught us that there are cases of glaucoma with increased tension and without marginal excavation, and cases of marginal excavation without increased tension. The signs of acute glaucoma seen in the optic papilla can not be explained by the pressure hypothesis alone. Jacobson offers the following theory: The glaucomatous process, consisting in increased filtration from the anterior portion of the uvea, may, after a certain lapse of time, be recognized by the presence of an excavation of the optic disc, but not always by a perceptible increase of tension. The latter is still the most important symptom of the disease, for it is present, in the prodromal stage, in subacute and acute glaucoma, and in the majority of the cases of glaucoma simplex, and distinguishes this form of chorioiditis from all other inflammatory affections of the same membrane. The increased tension corresponds to an increased filtration, the lowest grades of which are not perceived by the sense of

touch, while they are plainly visible in the changes in the optic papilla. One hypothesis must be confirmed by the pathologist—viz., in every case of glaucoma simplex the anatomical conditions for increased filtration from the chorioidal veins must be demonstrable. The changes in shape of the optic papilla depend upon the entrance of the pathological fluid into the central canal and upon the increased intra-ocular tension. Jacobson decides that the old hypothesis, which defines glaucoma as resulting from all those conditions of stasis in the anterior portion of the chorioid which tend to produce an excavation of the papilla extending in a centrifugal direction, is still perfectly logical.

Experimental Investigations in Keratoplasty.—Wagenmann (*ibid.*) begins by citing the present status of the operation known as keratoplasty. The transplantation of flaps involving the entire thickness of the cornea has hitherto proved unsuccessful, not only in experiments on animals, but also in experiments on man. The flap becomes adherent and heals, it is true, but it does not remain transparent. The partial transplantation, as described and performed by Von Hippel, on the other hand, promises to give good results in suitable cases. Wagenmann's experiments were all performed on rabbits, under the influence of a 5-per-cent. solution of cocaine, with a previous disinfection of the skin and lids by a sublimate solution (1 to 1,000), and of the conjunctiva by a sublimate solution (1 to 5,000). If the animals be isolated, all means of protection or covering may be abandoned, though it may sometimes be wise to cover the parts with the nictitating membrane, drawn over and stitched to the outer canthus, or by means of a large conjunctival flap. An objection to this latter method is that the conjunctival flap is very apt to slough and form a nidus for micro-organisms. Wagenmann's experiments proved that flaps transplanted without pedicles do heal by first intention and with normal transparency. In cases where the flaps become permanently cloudy, this may be due to some infection coming from without and interfering with the physiological process of healing. In man the possibility of this infection may be prevented by strict antisepsis. The preservation of the endothelium is of great importance in maintaining the transparency of the transplanted flap, for, if the endothelium be injured, the aqueous humor causes a loss of transparency of the transplanted flap by imbibition. Through this imbibition the nutrition of the corneal cells and the parenchyma is interfered with, the cells are either partially destroyed or proliferate, and the parenchyma becomes markedly fibrous. The swelling of the tissue caused by this imbibition only disappears after several days, and the pressure thereby induced sets up changes which outlast the regeneration of the endothelium.

A Case of Homonymous Right Hemianopsia with Alexia and Paralysis of the Trochlearis.—Brandenburg (*ibid.*) reports an interesting case of this kind occurring in a man aged sixty-five. The patient, a healthy man, with only one useful eye, was suddenly attacked with vertigo, which ended in coma of thirty-six hours' duration. When he regained consciousness, there was dullness of intellect and of memory, slight aphasia, right hemianopsia, paresis of the right trochlearis nerve, secondary contraction of the antagonist, and alexia without agraphia. Owing to the left eye being blind, it could not be determined by the perimeter whether a median hemianopsia due to a lesion of the chiasma was present, or whether there was an homonymous hemianopsia, caused by some rupture of continuity of the fibers of the left optic tract somewhere between the chiasm and the peripheral ends of the fibers. The presence of homonymous hemianopsia was determined by the fact that in illumination of the nasal half of the retina by the lens or mirror, the pupil contracted and the patient saw light. Hence the left optic tract must have been intact as far as the point at which its fibers form the reflex arc for contraction of the pupil with fibers of the right oculo-motor nerve—that is, as far as the corpora quadrigemina. The cause of the hemianopsia must, therefore, lie on the side of the cortex from the plane of this reflex arc. The alexia or word-blindness was not marked. The lesion was somewhere in the left hemisphere. The absence of anæmia and of heart disease, and the gradual diminution of the severity of the symptoms, point to hæmorrhage as the cause, and this view is strengthened by the fact of the rigidity and sclerosis of the peripheral arteries.

The Ligamentum Pectinatum and the Termination of the Membrane of Descemet.—Straub's (*ibid.*) observations have led him to the

following conclusions: In man the first changes in the membrane of Descemet appear about half a millimetre in front of the attachment of the iris. The endothelial cells become smaller with nuclei closely crowded together. The zone of small endothelial cells measures 0.2 millimetre. In its second half the membrane of Descemet consists of two lamellæ, both covered with endothelium. The upper lamella soon ends in a wide-meshed network of fibers, which are covered with elongated epithelial cells.

The deeper lamellæ of the membrane of Descemet, which are dark in polarized light, form plates of fine fibers, perforated by holes and closely connected together, the direction of the fibers being first longitudinal and afterward transverse. Near the angle of the anterior chamber they spread out like a fan, the character of the plates is lost, and a cavernous elastic tissue is formed, which is partly lost in the iris and partly serves as points of insertion for the ciliary muscle. Straub regards the marginal ring of connective tissue of the membrane of Descemet as a rudimentary ligamentum pectinatum which has been separated from the iris either by the development of the individual or the development of the species.

The Origin of Ruptures of the Sclerotic and Chorioid.—Hughes (*ibid.*) holds the following views in regard to rupture of the sclerotic: The blunt force must strike the eyeball with a superficies of twenty millimetres in diameter, and about in the direction of its center of gravity. The greater superficies prevents any lateral yielding of the eye, and it is therefore driven into the orbit. The globe is pressed strongly against Tenon's capsule, so that any rotation in consequence of greatly increased friction is rendered difficult and even impossible. As the intra-ocular tension increases, the part of the eyeball farthest away from the point of contact with the foreign body assumes the shape of a cup or bowl. The restraining ring becomes more and more curved, until finally the eyeball bursts. The point of rupture is always at the line of union between the cornea and sclerotic. The margin of the sclerotic is under strong tension, while the eyeball assumes a globular shape, because it is the only zone of the eye which under normal relations appears concave outward. If now this point of tension coincides with the curvature of the restraining ring, the rupture must of necessity occur at this point. As the intra-ocular pressure bears perpendicularly on the walls of the eye, the rupture also occurs in the same direction. In the great majority of cases the rupture occurs in the supero-nasal quadrant, because the force of the blow comes from downward and outward, though the rupture may occur at any point. In the case of the chorioid, the force coming from the same direction, the rupture cuts the line between the optic papilla and the macula, and is concentric with the optic disc. If the blow comes from the nasal side, the chorioid rupture occurs on the nasal side of the disc. If the blow comes from above or below, the rupture occurs in the vertical direction. Hughes formulates his conclusions as follows: 1. In rupture of the chorioid, the *contrecoup* plays a part merely in those cases in which a small part of the cornea is struck. 2. Ruptures result as a consequence of tension, induced on the one hand by a flattening and yielding of the cornea, and on the other by an increase of those diameters of the cornea which are perpendicular to the axis of vision, as a result of incompressibility of the media. 3. The ruptures in the optic nerve are to be attributed to the unyielding character of this region; the chorioid is here firmly fixed, the increasing tension acts upon it from all sides, especially upon the small part of the papilla, and there the rupture must occur.

The Operative Treatment of Trachoma.—Schueller (*ibid.*) gives the following directions for operating on cases of trachoma: After careful antiseptic irrigation of the eye and *cul-de-sac*, the operator strongly everts the eyelid and pushes the retrotarsal fold as far out as possible by pressing the edge of the lid against the eyeball and into the orbit with the end of the index finger. This manœuvre is aided by an assistant pressing the other lid back against the eyeball without everting it. The operator then takes Snellen's broad squeezing forceps in the right hand, and grasps the retrotarsal fold of conjunctiva in a grip from two to four millimetres wide, and if possible throughout its entire length, and firmly locks the forceps. The assistant then firmly holds the lid which is to be operated upon, the operator takes the forceps in the right hand, draws the conjunctiva as far as possible outward and

forward, and with a pair of Cooper's scissors cuts off all the swollen portion as far down as the subconjunctival tissue. The hæmorrhage is checked with iced compresses, the *cul-de-sac* is thoroughly cleaned by irrigation with an antiseptic solution, and the eye closed with a bandage, which is changed daily for three days. If both eyes are operated upon simultaneously, they are kept bandaged for eight days, the bandage being kept wet for twenty-four hours with the antiseptic solution; and the eyes are irrigated every day with the same. After eight days the wound usually presents a linear cicatrix. The treatment of these cases is thus materially shortened, and any accompanying processes being removed, the wound also heals rapidly. Recurrence of the trachoma is very rare.

A Method of Operating for Entropion and Trichiasis.—Pfalz (*ibid.*) suggests that the entropion and trichiasis may be cured by one operation, which consists in a stretching of the tarsus by the excision of a wedge-shaped piece, as Streetfield and Snellen have suggested, and the simultaneous lifting forward and upward of the edge of the lid by cutting out a piece of skin and closing the defect by sutures, as Arlt, Jaesche, and Burow have done. The operation which Pfalz suggests differs from the other in the broader base given to the wedge, the position of the skin and muscle excision, and the nature of the suture. The operation is indicated for all cases of entropion due to pathological changes in the lid, especially in the tarsus and conjunctiva.

The Indications for the Operative Treatment of Paralytic Deviations of one Eye.—Graefe (*ibid.*) calls attention to the vague ideas which still exist in regard to the principles involved in the operative treatment of the functional annoyances and disturbances caused by paralysis of an ocular muscle, especially of one of the muscles which pull the eye upward or downward. The two operations to be considered are the operation of advancement and that of tenotomy. If in the case of a paralyzed muscle no increase in motility is gained by the operation of advancement, still the so-called dislocation or displacement of the arc of rotation toward the side of defective motility will help to make this defect less noticeable. With reference to this effect of the operation, it might better be known as the method by substitution. While the operation of advancement is always done on the paralyzed muscle, the operation of simple tenotomy may be done either on the antagonist of the paralyzed muscle or on its associated muscle in the other eye. In the first case the operation is mainly done for the purpose of endeavoring to re-establish the loss of equilibrium between the paralyzed muscle and its normally enervated antagonist. In the second case the main object is a restoration of a symmetrical action of the muscles co-operating in the associated movements of the eyeball, and hence this operation is a compensatory one. In the case of an isolated paralysis of the rectus superior or the rectus inferior, the operation of compensatory tenotomy must be avoided, inasmuch as it is practically impossible. Hence in such a case the paralyzed muscle must be advanced, and its antagonist must be divided, for the purpose of restoring equilibrium.

The Escape of Fluid from the Aqueous and Vitreous Chambers under Different Pressures.—Priestley Smith ("Ophth. Rev.," July, 1888) believes that the vitreous humor probably receives its nutrient supply exclusively from the ciliary portion of the uveal tract. Positive evidence in favor of its nutrition, at least in part, has been obtained by various experiments. With regard to the escape of fluid from the vitreous, there is a remarkable conflict of evidence. On the whole, it seems indubitable that there is an escape along the lymph spaces surrounding the central vessels of the papilla, but it seems probable that the amount of fluid escaping here is extremely small. His experiments with single injections show that the escape of fluid from the eye is about three times more rapid during injection into the vitreous chamber. The escape of fluid at the back of the eye is extremely small as compared with the escape in the ciliary region. The escape from both chambers during such injections is influenced by the more or less advanced position of the base of the iris. With regard to double injections, a comparison of his results will show that much less fluid escapes from the eye during simultaneous injection of both chambers than during injection of the aqueous chamber alone. Since the pressure in the aqueous chamber is the same in the two cases, the diminished escape must be due to a narrower outlet. When the aqueous chamber only is

injected, the angle opens more widely than when both chambers are injected, and the wider angle permits a more rapid escape. When a higher pressure is established in the vitreous than in the aqueous chamber, the rapidity of the escape is influenced in a more decided manner. His experiments do not suffice to show whether there is, under normal conditions, a persistent stream from the vitreous to the aqueous chamber, but they do show that fluid passes easily from one chamber to another under a very slight excess of pressure on one side of the diaphragm. So long as the diaphragm remains permeable and the intra-ocular fluid diffusible, any tendency to excess in either chamber would be quickly neutralized by osmosis into the other. If the normal stream of fluid which enters the vitreous from the ciliary body is of larger amount than the minute stream which escapes around the central vessels of the optic nerve, then the surplus must escape through the anterior chamber.

Corneal Fibroma.—Scott and Story (*ibid.*) report a case of this kind occurring in a young man aged twenty. In March, 1886, there was a small yellowish-white growth in the left cornea, which has existed ever since. The tumor occupied the supero-temporal quadrant of the cornea, was oval, the long arc axis being six millimetres, the short four millimetres in length, and it lay with its long axis perpendicular to the corneal diameter, which bisected it. Small blood-vessels could be seen ramifying over the growth, which was sharply defined from the surrounding corneal tissue. Its surface was not elevated, and the epithelium passed over it without a break. A piece of the growth four millimetres long by three wide was excised, which procedure was followed by considerable hæmorrhage. The little ulcer which was left healed over in a few days, blood-vessels developing in it with great rapidity. Sections made of the hardened piece showed that the conjunctiva corneæ was unaltered, but immediately beneath this the abnormal tissue was seen to supplant the corneal tissue proper. The new growth was mainly formed of connective tissue, with a large number of blood-vessels, and numerous groups of nuclei, in some places so numerous as to suggest sarcoma. The microscopic structure was very similar to a cicatrix. The corneal opacity may have been congenital, antedating the ophthalmia which the patient had had in early youth.

Scheme for the Topical Diagnosis of Disturbances in the Reflex Movements of the Pupils.—Magnus ("Kl. Mntsl. f. Augenheilk.") has developed rather an ingenious scheme for locating the position of the lesions in disturbances of the reflex movements of the pupil, and by this he also claims to be able to gain a clear insight into the conditions of pupillary reactions in the normal state. He maintains: 1. That the direct and consensual reactions of the pupil show no marked difference, inasmuch as both follow the direct transmission of the light-stimulus to the nucleus of the oculomotorius (due to an incomplete decussation in the chiasm). 2. That the direct and consensual pupillary reactions are equal in extent to each other, inasmuch as both are really direct. 3. That the direct pupillary reaction is composed of that part of the light-stimulus which passes along the uncrossed fibers of the optic nerve of the excited side to the corpora quadrigemina and thence to the oculomotorius nucleus of the excited side, and of that part of the light-stimulus which passes through the crossed fibers of the optic nerve to the corpora quadrigemina and oculomotorius nucleus of the opposite side, and returns through the central union of both reflex circles to the nucleus of the same side. 4. The consensual reaction is composed of that part of the light-stimulus which goes through the crossed fibers of the optic nerve to the corpora quadrigemina, and thence to the oculomotorius nucleus on the side opposite to the irritated eye, and of that part of the light-stimulus which passes through the uncrossed optic nerve fibers to the corpora quadrigemina and oculomotorius nucleus of the irritated side, and thence passes through the central union of both reflex circles to the oculomotorius nucleus of the opposite side. 5. The conditions of decussation of the optic nerves in the chiasm and the central union of the reflex circles are the cause of the size of the two pupils being the same. Differences in the diameters of the pupils can therefore never be caused by disease or lesion of the nerve tracts which conduct the light-stimulus to the center, but only by disease or lesion of the centrifugal part of the reflex circle. In studying the pathological reactions of the pupil, Magnus has found it convenient to divide the reflex circle into three parts: 1. The cen-

tripetal part, consisting of optic nerve, chiasm, optic tract, and line of union with the cortex. 2. Meynert's fibers, which carry the light-stimulus from the corpora quadrigemina to the oculomotorius nucleus. 3. The centrifugal portion of the reflex circle, including the nucleus for the sphincter iridis, the trunk of the oculomotorius, and the terminations of the oculomotorius in the iris.

Miscellany.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 31st:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 11th corresponded to an annual rate of 17.6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 9.2, and the highest in Plymouth, viz., 23.5 in a thousand. Small-pox caused 1 death in Preston, 1 in Nottingham, and 3 in Manchester. Diphtheria caused 3 deaths in Nottingham.

London.—One thousand four hundred and seventy-six deaths were registered during the week, including measles, 51; scarlet fever, 17; diphtheria, 25; whooping-cough, 27; enteric fever, 6; diarrhoea and dysentery, 138; simple cholera and choleraic diarrhoea, 5. Diseases of the respiratory organs caused 183 deaths; different forms of violence, 56; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 18 in a thousand. In greater London 1,791 deaths were registered, corresponding to an annual rate of 16.9 in a thousand of the population. In the "outer ring" 21 deaths from diarrhoea, 4 from diphtheria, and 4 from measles were registered.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending August 11th in the sixteen principal town districts of Ireland was 16.9 in a thousand of the population. The lowest rate was recorded in Galway, viz., 3.4, and the highest in Armagh, viz., 25.8 in a thousand. In Dublin 131 deaths were registered, including whooping-cough, 3; enteric fever, 1; scarlet fever, 3; and diarrhoea, 4.

Twenty-two thousand nine hundred and eighty-three deaths were registered in Ireland during the quarter ending June 30, 1888, corresponding to an annual rate of 19.2 in a thousand of the estimated population. The deaths included measles, 606; scarlet fever, 229; typhus-135; whooping-cough, 281; diphtheria, 110; enteric fever, 140; diarrhoea, 228; and simple cholera, 4.

Scotland.—The deaths registered in eight principal towns during the week ending August 11th corresponded to an annual rate of 15.6 in a thousand of the population, which is estimated at 1,314,274. The low, est mortality was recorded in Leith, viz., 11.2, and the highest in Greenock, viz., 18.9 in a thousand. The aggregate number of deaths registered from all causes was 395, including measles, 6; scarlet fever, 2; diphtheria, 7; whooping-cough, 5; fever, 6; and diarrhoea, 87.

Denmark.—The Danish Government issued a quarantine order under date of July 27, 1888, as follows:

[Translation.]

The proclamation of the Ministry of Justice dated February 24, 1888, and ordering quarantine against ships coming from or having touched Italian ports on the Adriatic Sea between Ortona and Bari, both inclusive, and the provisions against importation of the things mentioned in the law of July 2, 1880, § 32, sec. 1, from the above-named harbors, is hereby discontinued.

Quarantine will henceforth be discontinued.

The provisions of sec. 2, § 1, of the law of July 2, 1880, referring to precautionary measures against the introduction of contagious diseases into the kingdom, are hereafter to be enforced with reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egersund; Grimsby; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe; St. Iago di Cuba; ports in the East Indies, Tonkin, and Cochin China; Trieste; all ports in Egypt; all ports on the Red Sea; Rio de Janeiro and Havana.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bedclothes, providing the articles named do not constitute the personal effects of travelers, waste cotton or wool, refuse paper, hair and hides, remains in force in reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egersund; Grimsby; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe; St. Iago de Cuba; and ports in East India, Tonkin, and Cochin China.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bedclothes, providing the articles named do not constitute the personal effects of travelers, remains in force in reference to Rio de Janeiro and Havana. In addition thereto, special attention is to be paid to the cleansing under official inspection of linen, clothing, and bedclothes brought from either of the last-named places as the personal effects of travelers.

This order to go into effect at once.

Martinique.—The United States consul, in his dispatch dated August 7, 1888, states that "by the last official report of the governor St. Pierre and Fort de France have enjoyed absolute immunity from small-pox for more than six weeks past, and that in the whole island there have been during the last fortnight of July only 160 cases and 30 deaths from this disease, all in the interior of the island."

Bordeaux, France.—Four hundred and seventeen deaths were registered during the month of July, 1888, including enteric fever, 13, and diphtheria and croup, 25.

Nassau, N. P.—The United States consul, in his report for the week ending August 18th, stated: "Weather hot and wet. City healthy."

Bermuda.—The United States consul, in his report for the week ending August 21st, stated: "Islands very healthy."

Havana.—Twenty-nine deaths from yellow fever were registered during the week ending August 18, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.
Paris	August 11.	2,260,945	869			1		9	4	24	29
Glasgow	August 11.	545,678	166					1			
Warsaw	August 4.	444,814	194			5			2		
Calcutta	July 14.	433,219	143	11						1	
Rome	July 7.	391,188	211				6				
Rome	July 14.	391,188	209					1	1	4	
Amsterdam	August 11.	389,916	149					1			
Copenhagen	August 7.	300,000	111					1		6	
Munich	August 4.	275,000	167							5	
Edinburgh	July 28.	262,733	69						1	1	
Edinburgh	July 4.	262,733	79								
Palermo	August 11.	250,000	79							1	
Belfast	August 11.	227,022	74								
Bristol	August 7.	125,510	58					1		1	
Havana	August 18.	208,000	166		29	2		5			
Genoa	August 11.	179,664	71			1	1				
Trieste	July 28.	154,500	93			4				1	
Stuttgart	August 11.	125,510	38								
Bremen	August 4.	122,000	36							2	
Havre	August 11.	112,074	88					17	1		
Leghorn	August 12.	101,854	31								
Leith	July 28.	74,320	21					1			
Leith	August 4.	74,320	15								
Cadiz	August 11.	65,028	45								
Matanzas	August 22.	40,000	26			3					
Guayaquil	July 22.	30,000	54		1						
Guayaquil	July 29.	30,000	34		1						
Vera Cruz	August 16.	23,800	22								
Gibraltar	August 5.	23,631	6					1			
Cape Haytien	August 12.	15,000	9								

UNITED STATES.

Buffalo, N. Y.—The medical officer in charge of the Marine-Hospital Service reported, under date of August 23d, as follows: "Since my

last report (July 30th) there have occurred in this city 10 new cases of small-pox, making a total of 21 up to the present time. Of these, 4 have proved fatal."

Springtown, Ohio.—The president of the State Board of Health reported August 23, 1888: "Another case of small-pox has developed at Springtown, Monroe County, Ohio."

St. Mark's, Fla.—At the request of citizens, the governor has appointed a board of health for the county, and, in accordance with instructions from this bureau, persons will not be allowed to land from infected ports unless provided with a certificate that their baggage, etc., is thoroughly fumigated.

Blackshear, Ga.—The postal clerk, Mr. Ballentine, sick with yellow fever at Blackshear, was thoroughly isolated and guarded, and no communication allowed outside the line.

Surgeon W. H. H. Hutton telegraphed August 29th: "Ordered Ballentine's bedding burned last Monday; clothing and linen washed, boiled, and rinsed in bichloride solution; house fumigated. Will repeat the process Friday, personally, and remove quarantine Monday if nothing further occurs."

Fernandina, Fla.—In regard to the rumor of the existence of a case of yellow fever at Fernandina, Acting Assistant Surgeon Starbuck telegraphed August 28th: "Rumor false. City never healthier or in better sanitary condition."

Tampa, Fla.—Dr. J. P. Wall reported August 26th: "No fatal cases of yellow fever since the 14th inst. . . . The fever on the Manatee River has thus far proved to be of a mild type; very few deaths."

Jacksonville, Fla.—Dr. Neal Mitchell, president of the Board of Health, telegraphed as follows:

August 25th: "For twenty-four hours ending 6 P. M.: New cases, 7; deaths, none; recoveries, 2; under treatment, 59. Total number of cases to date, 91; total number of deaths to date, 12."

August 26th: "For twenty-four hours ending 6 P. M.: New cases, 9; deaths, 2; recoveries, 2; under treatment, 64. Total number of cases to date, 100, of which 9 are colored; total number of deaths to date, 14. One case received from Camp Perry to-night."

August 27th: "For twenty-four hours ending 6 P. M.: New cases, 10; deaths, 3; recoveries, 9; under treatment, 62. Total number of cases to date, 110; total number of deaths to date, 17."

August 28th: "For twenty-four hours ending 6 P. M.: New cases, 21; deaths, 2; recoveries, 9; under treatment, 72. Total cases, 131; total deaths, 19."

August 29th: "For twenty-four hours ending 6 P. M.: New cases, 34; deaths, 4. Total number of cases, 165; total number of deaths, 23."

SUMMARY.—August 30th, 6 P. M.: Total number of cases to date, 188; total number of recoveries, 40; total number of deaths, 26; total number of cases now under treatment, 122.

Camp Perry, Fla.—Passed Assistant Surgeon Guitéras telegraphed:

August 29th: "Eighty refugees at muster this morning, and 17 employees."

August 30th: "Arrivals, 5; at muster, 85; employees, 18; discharged to-day, 1."

Bainbridge, Ga.—Upon rumor of yellow fever at this place, Assistant Surgeon H. D. Geddings was directed to proceed to that village, and in his report, through Surgeon Hutton, dated August 27, 1888, he states that—

"Bainbridge is situated in Baker County, on the Flint River, and is eight miles from the line of the Savannah, Florida, and Western Railroad, and is connected with it by a branch road. The population is about 1,600, and is equally divided as to whites and blacks. The soil is a fine white sand, underlying which is a red decomposed sandstone, which makes a very porous soil, through which water percolates rapidly, and even after the heaviest rains no water collects or stands stagnant. The elevation of the town was given to me as 119.6 feet above tide-water. In the past six months there have been only 3 deaths in the town—one white female from pyosalpinx; one colored male adult, from typhoid fever; and one colored child, from eclampsia. At present there are but 2 cases of illness in the town, one of which was reported to me as 'nephritis' of long standing, and the other (which I

visited) a case of remittent malarial fever. Apart from this no malarial diseases exist.

"The town is in the hands of a thoroughly live, intelligent, and vigilant board of health, and all persons coming in, either by rail or boat, are required to present satisfactory certificates of health and non-exposure to contagion of any kind. The town is thoroughly policed daily, and weekly inspections are made by the board and a committee of citizens. The streets are clean, well kept, and a large force is at work on them daily. The privies are open (without vaults), and once in each week are raked out, the excrement buried, and the spots disinfected with a solution of sulphate of iron and quicklime. The water-supply is admirable. There are no surface wells in the town, and the cisterns which existed prior to the introduction of the present system have fallen into disuse, except for washing purposes. The supply is derived from two artesian wells—No. 1, 965 feet, and No. 2, 1,135 feet in depth. . . . These waters are pumped into a stand-pipe and distributed through about six miles of mains, and from them to almost every residence in the town. [Analysis was inclosed.]

"In conclusion, I would state that the town of Bainbridge is in a highly satisfactory sanitary condition; that the health condition at present is as good as could be reasonably desired; that the importation of contagion is almost an impossibility under existing regulations, and, most important of all, that the utmost vigilance prevails and will be maintained."

Live Oak, Lake City Junction, and Lake City have also been inspected by Dr. Posey, and reported healthy.

The following circular has been issued:

Circular.—Regulations for the prevention of the spread of yellow fever from certain infected places in the State of Florida.

TREASURY DEPARTMENT,
Office Supervising Surgeon-General, U. S. Marine-Hospital Service,
WASHINGTON, D. C., August 28, 1888.

In accordance with the act of April 29, 1878, and appropriation acts authorizing the maintenance of quarantine at points of danger, the following regulations are framed to assist in the work of preventing the spread of yellow fever, now prevailing as an epidemic in certain towns in the State of Florida:

1. A camp of refuge for persons from infected places in Florida is hereby established, to be under command of Passed Assistant Surgeon Guitéras, on the south bank of the St. Mary's River, near the crossing of the Savannah, Florida, and Western Railroad, to be known as Camp Perry. Temporary quarantine stations are hereby established, under direction of Surgeon Hutton, Marine-Hospital Service, near Way Cross, Ga., and Live Oak, Fla. Those at Du Pont, Ga., and Chattahoochee River Junction are hereby discontinued.

2. At the stations aforesaid an inspection will be made of all persons, baggage, mail, and express arriving by rail from points south; and in case of arrival of any person, mail, baggage, or express matter capable of conveying infection, coming from an infected place or a place not known to be healthy, as shown by recent inspection reports, then such person shall either be returned to the original place of embarkation or to Camp Perry, at his or her option, and the baggage of such person shall be held for fumigation, and fumigated under the direction of the officer in charge. Mail matter from infected places will be fumigated under the direction of the Railway Mail Service, under orders already issued by that service.

3. All persons arriving in Camp Perry will be under the orders of the commanding officer, and will not depart the camp without permission until ten days shall have elapsed from the date of their departure from an infected place. A special daily train will run between Jacksonville and Camp Perry, for the purpose of conveying persons from Jacksonville and such other business as may be incident thereto, and at the expiration of the detention period such persons will be taken to Way Cross, and then allowed to proceed to their destination without further detention.

4. Railway agents, conductors, or other persons in charge of railway trains south of and including those of the Savannah, Florida, and Western Railroad will not receive persons from infected places on board trains, except to the refuge camp as provided in paragraph 1 of

this circular, and sleeping-cars will not be allowed to proceed south of Way Cross, Ga., until the cessation of the epidemic.

5. An additional refuge camp, under the same regulations as those governing Camp Perry, will be established in the mountains of North Carolina (the site hereafter to be determined) as soon as practicable.

JOHN B. HAMILTON,
Supervising Surgeon-General.

Approved:

C. S. FAIRCHILD,
Secretary of the Treasury.

Since the issue of the foregoing circular the erection of two hundred cheap barrack huts has been authorized to be built near Jacksonville for the negroes liable to propagate the fever, who will immediately be removed thereto, and their present quarters thoroughly disinfected; and special excursion trains will run at intervals, under guard, to some point in the North Carolina mountains, to be hereafter designated, as soon as a sufficient number indicate their desire to go. Such persons, on arrival at their destination, will be released on parole, not to go to the sea-board or quarantined towns within ten days from date of departure from Jacksonville.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhoid fever.	Enteric fever.	Scarlet fever.
New York, N. Y.	August 25.	1,532,932	754	..	..	..	..	10	19	16
Philadelphia, Pa.	August 18.	1,016,758	439	..	..	..	..	32	3	2
Chicago, Ill.	August 25.	800,000	322	..	..	..	..	13	1	19
Baltimore, Md.	August 25.	431,879	164	..	..	..	..	13	..	..
San Francisco, Cal.	August 17.	330,000	108	..	..	..	..	3	..	5
Cincinnati, O.	August 18.	255,139	153	..	..	..	..	2	1	3
Cincinnati, O.	August 25.	255,139	119	..	..	..	..	5	2	1
New Orleans, La.	August 18.	248,000	100	..	..	..	..	..	..	7
New Orleans, La.	August 25.	248,000	103	..	..	..	..	..	13	..
Pittsburgh, Pa.	August 25.	230,000	95	..	..	..	..	7	..	3
Louisville, Ky.	August 27.	200,000	60	..	..	..	..	4	..	2
Milwaukee, Wis.	August 25.	195,000	101	..	..	..	..	..	1	..
Kansas City, Mo.	August 25.	180,000	56	..	..	..	..	5	..	..
Minneapolis, Minn.	August 24.	180,000	56	..	..	..	..	1	1	..
St. Paul, Minn.	August 25.	175,000	45	..	..	..	..	2	..	1
Rochester, N. Y.	August 25.	120,000	61	..	..	..	..	2	..	..
Detroit, Mich.	August 25.	116,340	..	..	..	..	..	3	..	2
Richmond, Va.	August 25.	100,000	39	..	..	..	..	1	..	..
Denver, Col.	August 24.	96,000	37	..	..	..	..	6	1	..
Columbus, Ohio	August 25.	93,000	30	..	..	..	..	1	..	1
Toledo, Ohio	August 25.	80,000	19	..	..	..	..	..	..	..
Lowell, Mass.	August 27.	72,000	44	..	..	..	..	..	2	5
Nashville, Tenn.	August 25.	65,153	20	..	..	..	..	1	..	1
Fall River, Mass.	August 25.	65,000	36	..	..	..	..	1	2	1
Charleston, S. C.	August 25.	60,145	44	..	..	..	..	3	..	..
Cambridge, Mass.	August 25.	59,660	35	..	..	..	..	1	..	3
Evansville, Ind.	August 23.	53,000	19	..	..	..	..	..	..	1
Savannah, Ga.	August 17.	52,827	20	..	..	..	..	..	..	..
Oakland, Cal.	August 18.	50,000	14	..	..	..	..	3	..	3
Lynn, Mass.	August 25.	50,000	17	..	..	..	..	..	..	..
Manchester, N. H.	August 25.	41,000	16	..	..	..	..	..	..	..
Mobile, Ala.	August 25.	40,000	17	..	..	..	..	..	..	..
Galveston, Tex.	August 17.	40,000	15	..	..	..	..	1	..	..
Portland, Me.	August 18.	40,000	12	..	..	..	..	..	..	..
Portland, Me.	August 25.	40,000	12	..	..	..	..	..	..	..
Wheeling, W. Va.	August 18.	35,000	11	..	..	..	..	2	..	..
Wheeling, W. Va.	August 25.	35,000	9	..	..	..	..	1	..	..
E. Saginaw, Mich.	August 27.	33,000	12	..	..	..	..	..	..	..
Burlington, Ia.	August 23.	30,166	4	..	..	..	..	..	..	..
Davenport, Ia.	August 25.	30,084	3	..	..	..	..	..	..	..
Salem, Mass.	August 27.	29,000	15	..	..	..	..	..	1	..
Yonkers, N. Y.	August 24.	27,500	7	..	..	..	..	..	1	..
New Bedford, Mass.	August 25.	26,845	14	..	..	..	..	..	..	..
Auburn, N. Y.	August 25.	26,000	9	..	..	..	..	1	..	..
Haverhill, Mass.	August 25.	25,000	16	..	..	..	..	..	..	..
Jackson, Mich.	August 25.	22,500	12	..	..	..	..	..	1	..
Newton, Mass.	August 26.	21,105	6	..	..	..	..	..	..	..
Newport, R. I.	August 23.	20,466	12	..	..	..	..	..	..	..

The Health of the State of New York.—According to the State Board of Health's "Monthly Bulletin" for July, the whole number of deaths reported was 10,300, including 35 from cerebro-spinal fever, 73 from typhoid fever, 51 from malarial diseases, 2 from small-pox, 141 from scarlet fever, 111 from measles, 23 from erysipelas, 108 from whooping-cough, 411 from croup and diphtheria, 2,957 from diarrhoeal diseases, and 73 from puerperal diseases.

The Southern Surgical and Gynecological Association.—The meeting which was announced for the 11th, 12th, and 13th inst. has been postponed in consequence of the quarantine laws.

Infantile Atrophy.—According to the "Lancet," "Bohn, following Henoch, defines infantile atrophy as an independent condition of the system, the result of a continuous deficiency in nutrition, the means of reparation of material being defective. Metabolism may be regarded as excessive or normal, and anabolism insufficient. Intestinal catarrh, though not a constant symptom, as maintained by Parrot, is a complication due to external causes. In these infants oedema of the skin or dropsy does not occur. The poverty of the solid tissues and organs of the body is shared by the blood, and no hydræmic state is developed. The cranial bones of atrophied infants during the first year of life are always hard, in marked contrast to the cranio-tabes of rachitic children of the same age. Bohn does not consider that the atrophy results from wasting of the intestinal mucous membrane, and the conclusion is that no organic disease at present known can produce that condition."

ANSWERS TO CORRESPONDENTS.

No. 224.—The institution was incorporated in 1857, having been organized in 1852. It became extinct in 1862 by the repeal of its charter.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

FLATULENT DISTENSION OF THE STOMACH, WITH SPASMODIC CONTRACTION AND HYPERÆSTHESIA OF THE ABDOMINAL WALLS;

THE DIAGNOSIS BETWEEN PHANTOM TUMORS AND
MORBID GROWTHS WITHIN THE ABDOMEN.

*A Clinical Lecture delivered at
the Hospital of the University of Pennsylvania, Philadelphia.*

BY WILLIAM PEPPER, M. D., LL. D.,
PROVOST OF THE UNIVERSITY AND PROFESSOR OF CLINICAL MEDICINE.

GENTLEMEN: This strong, hearty-looking girl, thirteen years of age, comes to us for an opinion in regard to the nature of a tumor which she thinks she has discovered in the left hypochondriac region. This tumor was first noticed about a year and a half ago. She lives in a somewhat malarious district, but, so far as can be ascertained, has never had chills and fever. She has always been healthy. The appetite is good. She can eat whatever she desires, but belches a great deal of wind after eating; the bowels are costive; she has never had diarrhoea nor vomiting. She is very nervous, and I can not induce her to lie on the bed. I shall therefore be compelled to make the necessary examinations with her in the sitting posture.

The heart is perfectly normal. The area of hepatic dullness is not too great. She complains of pain in the epigastrium and in the splenic region. The epigastrium is decidedly prominent. This fullness is soft. Pressure over it gives pain, which is worse on the left side than elsewhere. On removing the pressure, the prominence speedily returns. There is no pulsation, or hardness, or distinct tumor to be felt anywhere.

The epigastrium is not so resonant as we should expect to find it if this fullness were due to distension of the stomach with gas; but you observe that the note is more distinctly tympanitic when I press somewhat firmly as I percuss than it is when I allow my finger to rest lightly on the abdominal wall. Under the latter circumstances, the note is almost flat. It is almost flat even when I percuss with a considerable degree of force. The explanation of this is that the abdominal muscles are in such a condition of tension that when percussion is performed without firm pressure being made they give a flat sound—the note is not transmitted from the stomach; but when the abdominal walls are pressed in and brought in contact with the stomach, a tympanitic sound is produced.

This condition will often be found where there is distension of the stomach together with a spasmodic condition of the abdominal muscles. These muscles are strongly knotted, and their bulk is sufficient to cause dullness when percussion is made on the finger lightly applied. This state is found in many cases where we are trying to determine, in the first place, whether the liver is enlarged, and, in the second place, whether there is any tumor in the walls of the stomach. Simple percussion is often misleading, and, if we are not careful, may cause us to imagine that there is enlargement of the left lobe of the liver or that there is a

tumor of the stomach when no such condition exists. The fact that the condition is due to distension of the stomach and spasm of the muscles will be recognized by examining the patient in the recumbent posture. It will then be seen that the heads and different divisions of the recti muscles are more plainly marked than natural, and that there is spasm of the abdominal walls. If the patient's attention is drawn from the examination and gentle pressure is made, the muscles will become relaxed, but the instant palpation or percussion is employed they will again spring into a state of spasm. Not infrequently there is, in addition, some cutaneous or muscular hyperæsthesia. This spasm can sometimes be overcome by varying the attitude of the patient's body; by elevating the shoulders and directing him to draw up the knees and to breathe in and out deeply. Then, under the exercise of gentle and continuous pressure, the contracted muscles slowly relax, and we are able to depress the abdominal walls and readily and thoroughly palpate the epigastric region. At other times it is necessary to examine the patient under anæsthesia in order to be sure that the muscles are relaxed.

It is clear that in the present case there is no tumor of the stomach, nor is there any thickening or hardening of the walls of that organ; but there is a state of flatulent distension of the stomach with hyperæsthesia and spasm of the recti muscles. I am not sure that this is the only thing present, but of this there is no doubt.

Let us study the case further. Relaxing the abdominal walls as much as possible, I pass my finger beneath the ribs into the left hypochondriac region, but I can detect no marked enlargement of the spleen. I think that I feel the point of the spleen projecting a slight distance below the edge of the ribs. On percussion there does not seem to be much enlargement of the spleen, but I am prepared to admit that, if this patient were in a posture more favorable for relaxing the walls of the abdomen, we might find some enlargement of this organ. I can find no mass of any kind in the abdomen.

The proper explanation of this case is, I think, that the girl has had some malarial trouble, causing slight enlargement of the spleen, and that with this there are hyperæsthesia of the abdominal walls and distension of the stomach.

You are aware that considerable confusion occasionally arises from what are called phantom tumors. These may present themselves in any part of the abdominal cavity. They vary in size and shape, but they rarely exceed a man's fist in size, and are usually of an oval or rounded shape. They may be as large as a child's head. The epigastric region is their favorite situation. Their peculiarities are that they are very variable in their appearance; a tumor may be found at the first examination, but on the succeeding day it may have entirely disappeared, and perhaps during the examination it will again become evident. These tumors come and go without apparent reason. When present, they often closely simulate actual growths, being quite resistant to pressure and usually somewhat sensitive. On percussion they are sometimes resonant; at other times they yield but little resonance, the note indicating that

there is a considerable amount of solid matter between the finger and any gas in the intestine. These tumors are for the most part somewhat movable. They appear in persons of a neurotic temperament and are associated with other phenomena of disturbed innervation.

Phantom tumors are dependent upon one of two things: either upon irregular muscular contractions in the walls of the abdomen, with spasm of certain groups of fibers and the formation of knots in the muscles, or else upon spasmodic contraction of some part of the gastro-intestinal canal, with the imprisonment of gas and the formation of a rounded tumor, with the walls of the intestine in a state of spasm and with the abdominal muscles grasping it more or less spasmodically. This accumulation of gas may take place in the colon, in the small intestine, or even in a portion of the stomach. These bodies will often simulate intra-abdominal growths of various kinds. Their proper nature is to be recognized by a consideration of the general health, the peculiar neurotic state of the system, the variability as regards the presence of the tumor and its position, the absence of symptoms of obstruction of the stomach or intestines, the results of careful palpation, the fact that the tumor will sometimes disappear under the use of gentle manipulations and suddenly reappear when the surface is irritated, and the fact that the tumor entirely disappears when the patient is etherized.

Phantom tumors are not to be confounded with the movable abdominal tumors which come and go, and which are actual tumors, such, for instance, as a floating spleen, a floating kidney, or a fibroid tumor of the uterus with a long pedicle allowing it to appear in different parts of the abdomen. All these floating tumors disappear at times to reappear when the patient assumes a different posture or when the relations of the gastro-intestinal canal are altered. These are to be distinguished by the slight character of the general symptoms, by the absence, in the case of the kidney and spleen, of the organ from its normal position as revealed by percussion, and by the fact that they admit of careful palpation and can be grasped by the hand and, if the patient is etherized, can be examined minutely so as to remove every possibility of doubt. Moreover, in the case of a uterine fibroid, it can often be pressed down so as to admit of bimanual examination with one hand in the vagina and the other on the abdomen. A consideration of these facts, with the long duration of the tumor and the previous history which points to conditions that would favor the displacement of an organ, will enable you to decide that there is a true abdominal tumor.

This girl does not present a sufficiently defined body to be said to have what is properly called a phantom tumor, yet this distension, with pain in the epigastric region, approaches the border line. It is dependent upon a neurosis of the stomach, possibly associated with some malarial trouble, and certainly with dyspepsia, with flatulence, and with a spasmodic state of the stomach and the abdominal muscles. There is, however, so far as I can make out, no actual growth. There is also hyperæsthesia, which makes her complain of pain on light pressure, and on deep pressure she still complains of severe pain, but at the same time is

able to smile pleasantly. This is not the pain caused by pressing an inflamed or really tender morbid growth.

I should have mentioned before that, in the distinction between phantom tumors and movable tumors of the abdomen, nothing requires more careful consideration than the possibility of fecal accumulation. This must never be absent from our minds whenever we approach a case of abdominal disease, for fecal accumulation is a factor in a vast number of instances of abdominal trouble. When a mass is found in the abdominal cavity, no matter what its position, size, shape, or consistence, the possibility of its being a fecal accumulation is never to be forgotten. This is especially true if the mass is oval in shape, somewhat movable, not very painful, and not associated with evidences of marked derangement of the general health.

It will perhaps be instructive if I briefly relate a case that recently came under my notice. I was asked to see, in consultation, a man, aged about seventy-two, who had been suffering for a number of months, and was losing flesh and gradually sinking into a cachectic condition. I found him in bed, propped up with pillows, with a look of great distress upon his face, and complaining intensely of pain around the abdomen and in the back. When I came to examine him, I found it impossible to get him to lie down. He stated that lying down gave him agonizing pain in the back. When I tried to flex, extend, or rotate the spine, he complained of very severe pain in the dorsal region. On percussion, I found that there was a distinct increase of dullness posteriorly on the right side, at about the level of the kidney. The pain complained of extended down the right side more than down the left. The urine was thick, turbid, scanty, and offensive, was loaded with urates, and contained a certain amount of pus and epithelium from the upper urinary passages. There was a febrile movement in the evening, and there was copious sweating at night.

There was in addition, over the right flank and extending into the right iliac region, a sense of resistance, with some impairment of resonance upon percussion. The man could not be induced to lie down, and the abdominal muscles were so rigid that it was impossible to determine whether or not there was a solid mass in this region, but I thought that there was.

My diagnosis was, that there was an abscess connected with the anterior portion of the spinal column, in the lower dorsal region, involving the circumrenal tissue, and that this abscess was probably burrowing along the spine toward the right iliac fossa. The reasons that decided me in favor of a purulent collection, rather than cancer of the glands along the vertebral column, were the presence of hectic fever and night-sweats, the intense pain, the absence of enlargement of the glands, the absence of any external cancer, and the duration of the disease. I suggested aspiration, but this the man positively refused to allow. I never saw him again, but the case progressed and he died. I learn that large hypodermic injections of morphine became necessary to control the pain. Toward the close of the case the dullness which had existed in the right iliac fossa became so marked, and the resistance to pressure so great, that it was evident that a solid tumor was forming in this situation.

The bowels had been sluggish, but at the same time were moved by enemata, the stools being rather small and soft.

At the post-mortem examination there was found an abscess at the twelfth dorsal vertebra, with slight caries of the anterior surface of the lower part of the vertebral column and inflammation of the cellular tissue around the right kidney, not going to the extent of a perinephritic abscess, however. There was found about two fluidounces of pus, sufficient to produce all the symptoms which had been noted as referring to the back. The tumor in the right iliac fossa was due to enormous fecal distension. The cæcum was as large as an adult head, and through the center of the mass there was a sinuous channel through which a little liquid fecal matter trickled, furnishing the stools which were obtained.

The presence of this large mass must have been one factor that led to the use of large doses of morphine, which certainly had much to do in depressing the nutrition and hastening the fatal termination. No one is to be censured for not recognizing this fecal accumulation, because it was impossible to get the man into a posture which would enable careful palpation of the mass to be made, and because there was a primary disease of a suppurative or cancerous character on the anterior face of the vertebral column, which was not unreasonably thought to be associated with the formation of a similar collection at the lower part of the spine and along the iliac bone; and yet the fact that the man had not good fecal evacuations, and the possibility of this mass being a fecal accumulation, ought to have attracted serious attention to its nature.

This was, of course, a rare case, combined as it was with other obscure troubles rendering the diagnosis difficult. I want to impress upon you the importance of being alive to the possibility of an abdominal tumor being a fecal accumulation, and the importance of not making a diagnosis until by free evacuations of the bowels you are convinced that any tumor which remains must be something other than fecal accumulation. You should also remember the existence of these spasmodic phantom tumors and insist upon the elimination of the possibility of such a body before admitting the presence of a morbid growth.

The treatment of this girl should consist in the regulation of the diet, attention to the bowels, and the use of remedies to allay the nervous condition of the stomach and the hyperæsthesia of the abdomen. For this purpose I shall order four or five grains of bromide of sodium and a drop of dilute hydrocyanic acid to be taken after meals. She will also take with the meals a little pepsin. I shall assure her that there is no serious trouble, and tell her not to think about herself. In order to draw the attention from the stomach, it would, I think, be well to apply to the epigastric region some strong counter-irritant. I shall have tincture of iodine repeatedly applied over this part of the abdomen. Under this treatment there should be decided improvement.

Exposure of Wounds to Air.—If the view of Professor Leon Le Fort should prove well founded—namely, that exposure to the air does not interfere with the primary healing of wounds—it will tend to simplify surgical dressings, and make less interference with them possible.

THE INDUCTION OF PREMATURE LABOR.

*A Lecture delivered in the Course on Obstetrics
at the Medical Department of the University of New York.*

By WILLIAM M. POLK, M.D.,
PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

GENTLEMEN: We have now come to the subject of the induction of premature labor. The importance which is at present attached to this operation is due to the fact that within the last few years its performance has become a much more common matter than formerly, when it was only thought justifiable in such cases as extreme narrowness or deformity of the pelvis, and was not resorted to, as it is now, for the relief of the mother when exposed to the dangers of eclampsia, albuminuria, and the like. Let me say at the outset that by "premature labor" I mean any labor occurring before the completion of the full term of gestation and after the child has reached the period of viability—that is to say, after the seventh month of utero-gestation. Up to that time we speak of a labor as a "miscarriage" or an "abortion." But the term "abortion" is generally limited to a labor occurring before the fourth month, while "miscarriage" includes all labors previous to the period of viability as well as abortion.

Now, let me give you the indications for the induction of premature labor. They are, in general, any conditions likely to threaten or terminate the life of either the child or the mother. Now, the conditions which endanger the life of the mother, and call for operative interference, are, in general, these: Any condition that threatens her life through exhaustion. Under this head come obstinate nausea and vomiting; but we generally have to resort to abortion here rather than to the induction of premature labor, because this is a trouble which is likely to be most severe, and to call for relief, during the earlier months of pregnancy. Then comes that exhaustion which is incident to secondary diseases occurring in the progress of gestation, and the chief of these are puerperal mania and chorea. Then physical exhaustion incident to the mental state of the patient is not an uncommon indication for the induction of premature labor. Then we have a variety of diseased conditions belonging essentially either to the respiratory or to the circulatory system of the mother, which are accompanied by more or less exhaustion of her powers. Thus a chronic emphysema or a bronchitis in a woman who is pregnant, or a liability to repeated attacks of asthma, in itself predisposes the mother to abortion, because in these affections the blood becomes overcharged with excrementitious matters, the chief of which is carbon dioxide, and one of the principal predisposing causes of abortion is put down as "carbonic acid" in the blood. So, though this is a condition which sometimes relieves itself, yet there is occasionally a case where you will have to step in and interfere for the sake of the mother. It was in former times thought that the mother's life was of no account so long as she could be delivered of a living child, and that it was never justifiable to induce labor prematurely at the expense of the child for the sake of the mother; and in France and some other countries this is still the rule. The religious beliefs

of some people have also prevented them from ever sacrificing the child in favor of the mother. But now in this and in most civilized countries the mother's life is considered to be of more value, and so, if either life has to be sacrificed, it should be the child's. Hence we seem to be justified in inducing premature labor if such causes of exhaustion to the mother exist as I have spoken to you about. Again, if the mother is suffering from a cardiac disease, such as extreme stenosis of the mitral value, so that the blood overdistends the right side of the heart and causes extensive venous congestion in the lungs and abdominal viscera, premature labor should be induced early, for the chances are that you will have to come to it at last when respiration and the other vital processes begin to be interfered with. Still, other conditions than those I have mentioned are apt to call for this operation, such as pneumonia or a catarrhal bronchitis or a pericarditis with a very large effusion, all of which cause more or less interference with the respiratory function. Yet usually the patient speedily becomes so reduced by this condition of the chest that she is no longer able to endure the shock of the operation for inducing labor, and hence you are relieved from the responsibility of attempting it. But, if you see that her suffering is greatly added to by the distension of the abdomen with the enlarged uterus, which interferes with the movements of the diaphragm and so with the respiration, and if you think that labor can be induced without causing a great amount of shock, you will be justified in inducing it. But, in general, in case of disease in the mother, the advisability of resorting to this measure becomes a question of judgment, and it is one not to be determined until you have called a consultation and obtained the best light on the matter that the professional resources of the neighborhood will afford.

Among the indications for the induction of premature labor, deformities of the pelvis stand out prominently. Now it may be laid down as a rule that there is no chance whatever of extracting a living child through a two-and-a-half inch pelvis, and if such a pregnancy goes on to full term the only chance of saving the mother will be by removing the child by the operation of craniotomy or the Cæsarean section. Hence, to avoid the risks of embryotomy at the superior strait, which indeed are not much less than those of the Cæsarean section, and at the same time to save the life of the child, it is advisable to induce labor in such a case before the cranial bones of the fœtus have reached such a state of ossification as to render it impossible to extract it alive. Though a few cases are on record where a living child of seven months has been extracted through a two-and-a-half inch pelvis, yet, as a rule, it is practically impossible to extract a child alive through a pelvis with a conjugate diameter of less than two inches and a half or two inches and three quarters. I have never seen a case of a living child extracted through a pelvis of less than two inches and three quarters, and the reason is that the head of the fœtus is very compressible, and as you drag it down through a two-and-a-half inch pelvis after having performed version, the head becomes caught in the space between the symphysis pubis and the promontory of the sacrum, and the face

now becomes so compressed and the head so distorted that the chances are that the child will be killed.

These rules may be laid down for your guidance as regards the length of time you can wait: If you have a woman with a pelvis only two inches and three quarters in diameter antero-posteriorly, you should induce premature labor at the seventh month. If you have a conjugate diameter of three inches, you can put off the induction of premature labor to the thirty-third week; if the diameter is three inches and a quarter, you may wait till the thirty-fourth or even the thirty-sixth week; and if the diameter is three inches and a half or over, I think you can safely let the pregnancy go on to term, and the chances are that by performing version you will then be able to extract the child alive. These are the general rules for determining the best time to induce premature labor in cases of deformity of the pelvis; but when the deformity is not in the bony structures but in the soft parts, remember that the impeding mass will now bear a certain amount of compression, and so in estimating the diameter of the outlet you should introduce your hand into the vagina and compress the swelling as much as you can, and then measure the distance between it and the opposite wall of the pelvis while you keep up the pressure on the tumor.

In considering the disorders incident to the state of pregnancy, and calling sometimes for relief by the induction of premature labor, the first one I will speak of is the condition known as puerperal albuminuria. When this condition exists there is always a liability to convulsions, and, worse still, œdema of the lungs or chronic Bright's disease perhaps. These are all matters that are more or less understood, and they will be inquired into by the members of the patient's family, and especially as regards the dangers of chronic Bright's disease supervening. So you should carefully watch for symptoms of any of these difficulties arising, and, while you can say to the friends of the patient that the chances are against the development of chronic Bright's disease, yet there is no doubt that a sufficient number of cases do develop to render this a matter for your careful consideration. Then the development of œdema of the lungs in connection with the convulsions of albuminuria is a complication from which few escape with their lives.

If, therefore, during the latter months of pregnancy you see any evidences of uræmia, such as any disturbance of vision or derangement of digestion, you should make an examination of the urine, and not wait for the development of œdema of the limbs or general anasarca to tell you that the kidneys are beginning to fail to perform their functions. And do not be satisfied with a single examination of the urine if you find no traces of albumin, but repeat the test once or twice every day for one, two, or three weeks if necessary. But, if by that time you find nothing suspicious in the water, you can safely conclude that the disorders of vision and the gastric irritability are due to some derangement of the digestive tract. But in the majority of cases where these symptoms come on after the sixth or seventh month of pregnancy you will find some further evidence of trouble with the kidneys. And now that you have found these evidences, you are brought face to face with one of

the greatest responsibilities that a physician is ever called upon to bear, and it will require your best judgment to determine the extent of danger your patient is in, and just when your interference with the course of nature is called for. The rule is, however, that, as long as your patient is passing plenty of water and the specific gravity remains high, even though it contains a very large amount of albumin, and if she does not complain of persistent headache, she is doing well enough, and by the aid of well-directed therapeutic measures you will be able to carry her on to full term. To accomplish this end you must see that all her excretory organs are kept working freely, and especially the skin and the bowels, and that she is kept mostly on a milk and fluid diet, and then see that she takes plenty of exercise in the open air, and that all other symptoms are controlled as they arise. Yet if, in spite of these precautions, you find that the urine is becoming more scanty and its specific gravity is very low, and with this is associated a violent, persistent headache, with photophobia or other disturbances of vision, you may be sure that you are approaching dangerous ground. In such a case, therefore, you had better tell the friends, but never the patient herself, that she is in great danger, and that you fear convulsions may supervene. Now, in ninety-nine cases out of a hundred, if any harm befalls the patient after this, they will throw the whole responsibility upon you; hence you should first call a consultation and strengthen your position thus, and then go to work and do what you think the occasion calls for. But make it a rule never to induce premature labor without calling a preliminary consultation. If you induce one labor on your own responsibility, and either the patient or the baby dies, you will never hear the end of it, and this is simply because you are by this measure supposed to be going contrary to the laws of nature, which require that the child should be expelled only by the natural forces. But when you have called a consultation and decided that the patient's condition calls for interference with the course of nature, do not fear to go ahead and induce labor as rapidly as possible, and trust to nature for the consequences. The chances for the mother after this operation are always good, and for the survival of the child, if it has passed the seventh month, they are fair, and the better the longer the pregnancy has continued.

Next we come to placenta prævia as an indication for the induction of premature labor. This is one of the conditions in which you will be much more likely to get the consent of the patient and her friends to the induction of labor than where the danger is less apparent; for here the hæmorrhage is apparent to them all, and in the human mind there appears to be a natural fear of blood, so that men are willing to submit to almost anything in order to get rid of the sight of it. But here the responsibility resting upon you is in no respect less than in case of eclampsia; and practically the question of the advisability of interference here is not only one for the friends, but for you to decide; for no one can say positively that a patient with albuminuria will certainly have convulsions and will surely die, but almost anybody can say that, if the bleeding in a case of placenta prævia is profuse and unchecked, the chances are that the mother will die, and the child will

certainly. The question of interference is therefore less difficult for both you and the friends to determine, and you can more readily proceed without fear of being held responsible in case of accident. But even here it is best to first call a consultation, and when you have all become satisfied that the condition is really one of placenta prævia your duty is clear. It is to have the patient kept perfectly quiet in bed, and to carry her along, if you can, up to the completion of the eighth month, and then undertake to induce premature labor. By pursuing this plan you may be able to save both the child and the mother, and it is better to interfere at this time than to let the pregnancy go on till ended by natural labor, for you can not tell what will happen meanwhile. A profuse hæmorrhage may come on unexpectedly while you are away, and within ten or fifteen minutes before you can be summoned the woman may lose enough blood to destroy her own life, and certainly that of the child. You should therefore not attempt to procrastinate beyond the eighth month of pregnancy.

Now, a word in regard to the prognosis after the induction of premature labor. For the mother it is good, but not quite, though nearly, as good as in natural labor, and in natural labor you know about one in one hundred and twenty dies on the average. So the risk of inducing premature labor is not great enough, as a rule, to lead you to decline the operation when the safety of the mother or child calls for it. The prognosis for the child is, of course, not so good as for the mother, and it depends much upon the period at which the labor is induced. But I have already said sufficient on this point.

Now, as regards the dangers of the operation, first, to the mother, they are: Hæmorrhage from the accidental separation of a portion of the placenta from the uterine walls; the introduction of septic material into the uterus by means of the instruments employed; and, most striking of all, the danger from subinvolution of the uterus after delivery. For before the uterus has reached its fullest development at term, if delivery is induced, the muscular fibers in its walls do not seem to undergo the same fatty degeneration as in ordinary cases, but they remain firm and unyielding, and hence the uterus does not undergo a proper involution, but remains larger than it should. These are the chief dangers to which the mother is exposed. Shock is sometimes spoken of as one of the dangers, but it is not one that need influence you enough to hinder you from operating if you think necessary.

The principal dangers to the child depend upon the fact that a premature child needs to have more care taken in reference to its clothing, so that it will not take cold, and, if it is only a seven-months' child, it is best not to have it washed at all for the first thirty-six or forty-eight hours, until it has become somewhat accustomed to the change in its surroundings, and meanwhile it should be kept well wrapped up in cotton so as to keep it warm. Then, again, such a baby needs more care in nursing, for it may be so weak that it can not take the nipple, and you may have to feed it artificially, or you may have to get a wet-nurse for it because the mother's milk does not yet flow in sufficient quantities to nourish it.

Now, having discussed the indications for the induction of premature labor, we come to the description of the operation itself. A variety of measures have been suggested for attaining this end, but all of them have about the same object in view, and that is to open up the cervix and induce uterine contractions. The problem before us, then, is how to open the cervix, and after that bring on a sufficient amount of uterine contraction to cause the expulsion of the fœtus. And, first, the simplest means for overcoming the rigidity of the cervix and forcing it to open, and at the same time for stimulating the uterus to contract, is by the introduction of a Barnes's dilator, or Barnes's bag, which is a small fiddle-shaped rubber bag that, when empty, can be folded up into a very small compass, but, when filled with water or air, is expanded so as to occupy a greatly increased space. Now, after pregnancy has gone on for seven months or more, you will find the cervix sufficiently dilated for you to easily introduce one of the small-sized bags, and the manner of doing this is the following: Bring the patient down to the edge of the bed, or if possible put her on a table, which is harder, or, if this can not be done, put a board or a table-leaf under the mattress at the foot of the bed, so that her hips may not sink so deep into the bedding as to impede you, and, when you have put her in this position, with her knees elevated and thighs separated, you will have the uterus where you can easily get at it. Now fasten a catheter into the bottle-shaped mouth of the bag and secure it well by a string wound around it, and fold the bag up lengthwise and keep it so by pressing with the fingers of the right hand; then introduce into the vagina one or two fingers of the left hand until the cervix is felt, and then push the Barnes's bag up through the os uteri, guiding it by the fingers until it comes in contact with the membranes inside the uterus; it usually displaces these a little, and lodges to one side between them and the uterine wall. Having got it in position, next fill it by pumping water into it through the catheter by a Davidson's syringe, and then tie a string around the catheter so as to prevent the bag from emptying itself. By this means a sort of hydrostatic pressure is exercised upon the cervix, resembling closely that of the bag of waters in natural delivery at term. The peculiar shape of the bag enables it to keep its place in the cervix so that it will not easily come out, and, as it continues to exert pressure, its dilating power after a while is sufficient to cause some of the cervical muscular fibers to separate. This dilatation is kept up until labor-pains set in. After the first bag, which is of small size, has done its work, the cervical canal has become so large that the dilator falls out into the vagina, and then it should be removed and one of a larger size introduced, and this should in turn be replaced by the next larger size, and so, by the time you have reached the largest instrument, the dilatation or distension of the cervix will be sufficient, and labor-pains will usually be fairly at work; then you can safely leave the case to the processes of nature, and the labor will be completed in the natural way. If you rupture the bag of waters, however, you will render the process more rapid than it is in natural labor.

After dilating the cervix you will sometimes find that

the uterus is still sluggish and will not contract. To overcome this you can resort to the device of passing a catheter that has been well carbolized and not used for any other purpose up into the cavity of the uterus between the bag of waters and the uterine walls and leave it there in position; after a period varying from twenty-five or thirty minutes to an hour the chances are that labor will come on and be completed in the usual manner.

I have said nothing of hot-water injections or the rupturing of the bag of waters as methods of inducing labor, because I imagine that you will, as a rule, find the means of which I have told you the best ones and all that will be necessary. Yet, in cases where the cervix is hard and very unyielding, you may use hot-water injections to lessen this rigidity and soften the cervix so that you can introduce a rubber dilator.

But, after you have faithfully tried the Barnes's bags and the introduction of a catheter, and have failed to produce uterine contractions, you have one other resource to fall back upon, and that is the rupture of the bag of waters. But you had better not resort to this until you have tried the other means, and you can dilate the cervix no further with the bags, and the uterus will not respond to the catheter. But, after these have failed, the most powerful means at our disposal is to suddenly puncture the bag of waters so as to let the uterine muscles come down directly on the child's body. But this greatly increases the dangers of the child, for the pressure upon the placenta and cord as they lie between the uterus and the body of the fœtus is liable to so interfere with the circulation of the child as to asphyxiate it. So, if labor is not rapidly completed after this measure has been tried, there is only one other thing to do in order to save the child, and that is to perform version, bring down one foot, and deliver as rapidly as possible. It is rarely necessary, however, to resort to these extreme measures; but, if you ever find that it is, the only thing for you to do is to accept the responsibility and carry out the indications as well as you can.

Original Communications.

SULPHURIC ACID IN MEDICINE.

By CHARLES P. BECKER, M.D.,

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WITH new remedies continually presenting themselves and claiming our attention, we are in danger sometimes of neglecting our old and well-tried friends, and of forgetting that the possibilities of many of these have not been exhausted. This is the case with sulphuric acid, which I find is seldom prescribed for any purpose by some physicians, except, perhaps, as a solvent for quinine. This is somewhat surprising to me, as in my hands it has proved one of the most reliable substances in those cases to which it is adapted.

This acid, under the name of oil of vitriol, has long

been known in medicine and the arts. It obtained this name, as is well known, from its thick, oily appearance, and from being derived by distillation from green vitriol, or sulphate of iron. The distilled form, under the name of Nordhausen oil of vitriol, was used until quite recently whenever a very concentrated acid was desired, but the extreme cheapness of the modern lead-chamber or synthetic acid has practically driven the other out of the market. Few commercial articles, in fact, are cheaper than the ordinary sulphuric acid, its price, I think, being less than three cents a pound by the carboy. Druggists, in selling it at retail, frequently state that they charge for the trouble and danger in handling it, rather than for the article itself.

When the commercial acid is diluted with water, if this is not in large excess, much heat is developed, and this is frequently so intense as to crack the vessel, if of glass, in which the mixture is made. This is caused by the great affinity which the acid has for water, and the heat produced proves that a chemical union is taking place, and not a mere dilution. The process is analogous to the slaking of quicklime, in which a chemical combination also occurs with the development of heat.

Another thing that will frequently be noticed on diluting the commercial acid is that a slight precipitate falls, which may be separated by filtration. This is mainly sulphate of lead, which is soluble to some extent in the concentrated acid, but not in pure water or very dilute acid. The presence of this lead salt has caused many to object to the use of the ordinary acid for internal administration, under the idea that it might produce toxic effects; for, though the acid is always given very much diluted, still the precipitate is not always noticed or removed by filtration. This fear, I believe, is groundless, for the sulphate is one of the most inert of the lead salts, and the quantity that would be administered with medicinal doses of the acid would be practically infinitesimal. I have never heard of injury caused by it, and when I wish to take a dose myself I generally take it from the same bottle from which I supply my galvanic battery. However, in drug-stores the chemically pure article is always kept on hand, and this is very properly used in compounding prescriptions.

For internal use we have two principal forms—the official dilute acid (one part acid, thirteen parts water) and the aromatic, or elixir of vitriol. Though the latter is the stronger preparation, little regard is usually paid to difference of dose, which is from ten to thirty drops, very much diluted with water, and kept from the teeth by means of a glass tube through which it is sucked.

The destructive action of the acid on the teeth, and on textile fabrics on which it may be spilled, cause some to be prejudiced against it. A little care will guard against these accidents. Few men who handle the acid and wear black cloth clothes have failed to notice the manner in which the dye is changed to a bright-red color whenever a drop comes in contact with the garment; but every student of chemistry knows that the original color is restored by the application of a solution of ammonia, and, if the acid was not too strong, or allowed to remain too long unneutralized, little or no injury is perceptible in the fabric.

Sulphuric acid is in some respects the most powerful of all acids; that is, it can be made to drive out nearly all other acids from their chemical combinations and appropriate the bases to itself, forming sulphates. For this reason it is incompatible in prescriptions with nearly all salts except soluble sulphates. If this fact is not remembered, an effect may be produced on the system diametrically opposite to the one intended. For, if it were intended to administer sulphuric acid as a tonic, combined with the salt of a vegetable acid as an adjuvant, the stronger acid would appropriate the base, set free the weak vegetable acid, and this would have a relaxing instead of tonic effect, if any. Again, it must be remembered in adding a soluble salt to a solution of sulphuric acid, or of a sulphate, that if by a possible chemical interchange an insoluble substance may be produced, this will infallibly occur, and a precipitate will form.

The use of sulphuric acid as a solvent for the sulphate of quinine is known to every one, and it seems a very simple matter. Most druggists are competent pharmacists, and prepare such a solution properly if the ingredients are given. But once in a while something goes wrong. A common form of prescription is the following:

R Quininae sulph. gr. xxx;

Aquæ. ʒ ij;

Acid. sulph. q. s. ad sol. fac.

Now, if the official acid be poured on the quinine before mixing it with water, a very small quantity suffices to dissolve it, and the water, on being subsequently added, will not precipitate it, but if the quinine be first suspended in water and the acid added afterward, it takes a much larger quantity of the latter to form a solution, and it will be too sour.

As a tonic I have found this acid very serviceable. It is especially suitable to the condition of debility existing during slow convalescence from pneumonia, pleuritis, and erysipelas, and also after all the exanthematous fevers. Where night-sweats occur, this acid frequently acts like a charm, and patients who were becoming exhausted and dispirited after weeks of suffering from this annoyance have often been cured permanently after taking the acid only two or three days. Even during phthisis pulmonalis its beneficial effects are noticeable, and many are enabled to obtain sound and refreshing sleep under its influence who otherwise are afraid to close their eyes under the fear that they will immediately break out in a flood of perspiration. Given in this disease, it undoubtedly prolongs life, and gives a better opportunity for iron, cod-liver oil, or hypophosphites to exert their favorable effects. Sometimes it seems to slightly interfere with digestion; in this event its use should be intermitted or the dose reduced. No routine dosage should be relied upon, but its action upon patients should be carefully watched, and the smallest amount given that will produce a favorable result.

In the treatment of furuncles, sulphuric acid has in my hands acted as a specific. I have not once failed to cut short a course of boils where I have administered it. I have repeatedly had patients on whom these pests were breaking out numerous and persistently, and on whom

not another one developed after beginning with the remedy. I prefer it to the phosphate of soda. I have no doubt it has cut short many a threatened carbuncle. In boils and carbuncles a very weak solution applied externally by means of lint saturated with it seems to increase the rapidity of their healing.

This remedy is, in my opinion, very serviceable in the treatment of all suppurative diseases—for instance, salpingitis—and will do much to prevent the appearance of pyæmia and septicæmia; while I know of no other remedy on which I should so confidently rely after blood-poisoning has manifested itself.

Sulphuric acid was formerly used a great deal in the treatment of typhus and typhoid fevers. Of late it has to a great extent been superseded by other remedies in these diseases, as, for instance, antipyrine and acetanilide. While its good effects are not so marked in these fevers, of course, as in the minor complaints that I have mentioned, I still think them decided, and believe the acid specially adapted to the treatment of all fevers with gastric or abdominal complications, for reasons which I shall now state.

Sulphuric acid is a powerful germicide. Bacteriologists state that the comma bacillus of cholera can not live in liquids acidulated with it. It would thus seem well adapted as a remedy for that disease. During the cholera epidemic of 1866 we knew nothing of schizomycetes, and I treated my patients with morphine and mercury. Since that year I have not had a patient with Asiatic cholera; but should I have one to-day, I would give him sulphuric acid and sulphate of morphine. If the acid will kill the microbes, it may be used as a prophylactic. It is well understood to-day that cholera is propagated by the germs being swallowed with solids or liquids taken as food. Should, therefore, a case of cholera occur on shipboard or in a village, if every inhabitant were compelled to take daily a few drops of the acid, it seems to me that an epidemic might be averted. Typhoid fever is propagated in much the same way as cholera. In regard to yellow fever, this is also accompanied with gastric disturbances, in the worst cases amounting to black vomit. From what I know of the ætiology of this disease, I should much like to see the prophylactic effects of sulphuric acid tried during an epidemic of it, such as at present rages at Jacksonville and a few other places in Florida.

Undiluted sulphuric acid has been used for its caustic and escharotic effects, and has given good results when applied to gangrenous tissues. But the solid caustics are more manageable for ordinary purposes.

Finally, I wish to call attention to the possible usefulness of this acid in aseptic and antiseptic surgery. It is far cheaper than either carbolic acid or bichloride of mercury. It has not the vile odor of the first nor the poisonous properties of either of them. It can never do harm except when of corrosive strength. If it were absorbed, it would act as a tonic and not as a poison. I should not advise its use for the submersion of surgical instruments, as they would in time be attacked; but for direct application to wounded surfaces, or as a dressing, I believe it would be found to possess advantages.

Not knowing to what extent views expressed in this article may have been anticipated by others, no claim is made to originality.

HALE AVENUE NEAR ATLANTIC.

THE TREATMENT OF LATERAL CURVATURE BY POSTURE AND EXERCISE.*

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IN a clinical lecture published in December, 1886, I made some remarks on the treatment of lateral curvature, to which my friend, Mr. Roth, has recently called my attention. The remarks were as follows: "Mr. Bernard Roth, of London, has a system of twelve or fifteen movements . . . it is quite an amusing spectacle. It is rather embarrassing for a young lady to go into the doctor's office, bare herself down to the hips, lie prone upon the floor, twist herself around like a serpent, and bring herself up on all fours, with the doctor's foot on her pelvis. There is still a certain amount of modesty left in all classes of society, and the method seems objectionable for this reason." My presence this evening in the capacity of one who gives a demonstration of this same method demands an explanation, and it is this: At the time I delivered the lecture from which the quotation has been taken I had not seen the method as practiced by Mr. Roth. My attention had only been called to a modification of this treatment. It was this modification which led me to make the criticism I did, and to unjustly attribute this to Mr. Roth. Since I have had the opportunity of becoming better acquainted with the method, of witnessing the gymnastic treatment in the hands of the gentleman himself, I hasten to correct any erroneous impressions my paper may have made.

In the first place, there is nothing immodest in his method. The physician himself makes an examination when the patient comes under treatment. This is more or less complete, according to the routine of the individual practitioner. Mr. Roth directs the following: "The patient stands without shoes, with the feet close together and knees well extended, the pelvis being symmetrically placed in front of the surgeon. She is requested to hold the trunk in her habitual comfortable position, while the spinous processes of each vertebra, from the seventh cervical to the first sacral, is marked with a soft copying pencil. The patient is then inspected laterally and in front while in the same position. She is then told to flex the trunk thoroughly, still keeping the knees extended and the feet together, the arms hanging freely, with the scapular muscles relaxed, so as to uncover the ribs posteriorly as much as possible, when any inequality of the loins and ribs posteriorly is looked for. If there be any undue prominence of one loin, or of the ribs posteriorly on one side, I take a tracing, with a malleable strip of metal, of the loins opposite the third lumbar vertebra, and another of the ribs on a level with the lower angles of the scapulæ, while the patient's trunk is still kept flexed." In the second place, the exercises are taken, not in a semi-nude condition,

* A revision of a paper read before the New York Clinical Society.

but with a loose dressing sack or garment of similar nature. I shall trespass on your time a little to tell the society what advantages this treatment possesses, what it really does, and how much time is required. Assuming, for the sake of argument, that an osseous deformity in a lateral curvature is not amenable to cure by any method with which we are familiar, there is alleged for the treatment now under discussion a correction of vicious habits in standing and sitting, a correction of the apparent deformity to a great measure, and a substitution of muscles for mechanical appliances. Its most enthusiastic advocates do not maintain, so far as I can learn, any ability to cure a rotated spine. From an extended experience I am in a position to state what mechanical appliances will do for this deformity. Leaving out all question of a simple curvature dissociated from osseous changes, we can expect no more from a brace than a certain amount of support to the chest-walls and the spinal column. I have assumed the foregoing, as already stated, for the sake of argument. I think I am prepared not only to assume this, but to make this as a statement which can be proved. Still time will not permit it this evening, and I hasten to the second part of my paper, namely: The merits of the gymnastic method. This treatment permits us to entertain any theories we choose as to the ætiology of the curvature, hence it can be made applicable to almost all varieties. If a person can, by personal effort, partially correct a spinal deformity, however great, or however long the time when this corrected position can be maintained, then it is assumed that by a systematic course of exercise this effort can be prolonged and the time increased. To make it clearer, take a patient before a camera and induce such patient to maintain for a few moments the best possible position while a photograph is being taken. If now a good position can be maintained sufficiently long for this purpose, then by a system of drilling it may be maintained for a longer time. We need only bear in mind the extraordinary muscular developments that may be obtained by an athlete to understand how a group of muscles can under contraction correct this deformity. It will be found, on examining a number of cases, that the muscles on the concave side seem to be either weakened or to act at a disadvantage. It is maintained by many that the muscles over the convex side are the ones that should be developed, and hence when electricity is employed the electrodes are usually brushed over this region.

Whatever theories one may entertain as to the side on which the muscles should be developed, it can be clearly demonstrated, I think, that the muscles on the concave side are capable under contraction of bringing about an improvement in the curve. Take, for instance, the key-note position.* Here the improvement in some cases is quite as marked as can be shown under what is known as self-suspension. Indeed, in self-suspension we aim to get the left hand above the right where the curve is in the right dorsal, and changes in the curvature are quite pronounced. Pathological specimens that different authors have presented are

so conflicting in the settlement of this question that we are naturally led to depend for our own pathology upon the appearance of certain muscles in contraction. The movements that Mr. Roth advocates are as follows:

Lying on the back, arms by the side, hands supinated, very slow, deep inspiration by the nose, expiration by the mouth (four times).

2. The same with arms extended above the head (four times).

3. Same position as No. 1, head rotation, afterward flexion of the head (four times).

4. Lying on the back, slow simultaneous circumduction of both shoulder joints from before backward, elbows and wrists extended (twelve times).

5. Same position, one hip circumduction, both ways knees extended (ten times).

6. Lying on the back, simultaneous extension of both arms, backward, outward, upward, and downward from a position with elbows flexed and close to the trunk (ten times).

8. Sitting on a couch with back at an angle of 45 degrees, ankle circumduction, downward, inward, upward, and outward, the toes being inverted the whole time (twenty times). Also foot abduction (patient resisting), adduction (surgeon resisting [eight times]). Omit if there is no tendency to pes-planus.

9. Lying on the back, arms extended upward by the sides of the head, flexion of both arms (surgeon resisting). (The patient's knees flexed over the end of the table, fix the trunk.) Six or eight times.

10. Patient astride a narrow table, the arms down and hands supinated, trunk flexion at lumbar vertebrae (patient resisting), followed by trunk extension (the surgeon resisting by his hands against the patient's head [ten times]).

11. Patient, with arms extended upward, leans against a vertical post with pegs on each side; these he grasps. The surgeon gently pulls the patient's pelvis forward by his hands on the sacrum (patient resisting), also pelvis rotated on its axis to right and left alternately (surgeon resisting), with the hands on each side of the pelvis (eight times).

12. Lying on the back with the head and neck projecting beyond the end of the table, the head is gently flexed by the surgeon's hand on occiput (patient resisting [eight times]).

My own experience is limited in this treatment to about three months. During the winter I had twelve or fifteen patients in private practice under daily treatment, and while I am unable to make a full report, I feel that there is nothing lost, at all events, in omitting mechanical appliances. The employment of such appliances and gymnastic treatment at the same time are at great variance, for, if muscles are to be developed by systematic and daily exercises, then the pressure from the plaster corset or a brace on muscles we are attempting to develop must needs be harmful.

Mr. W. J. Walsham, orthopaedic surgeon to St. Bartholomew's Hospital, has made a report of the results obtained in 72 cases treated by "exercise and posture." Mr. Walsham's reputation for accuracy and observation is such

* When the patient stands quite erect and extends the arm corresponding to the concave side above the head to the extreme limit, while the arm of the convex side is extended to a right angle with the body, this position is called by Mr. Roth the "key-note."

that his report is especially valuable. Mr. Roth, however, quite naturally objects to the report, because of the lack of a correct record of the rotation. Mr. Walsham, for instance, speaks of "slight rotation, very slight, etc." In 33 cases the deformity was slight, in 29 pronounced, and in 10 advanced. In the 33 slight cases 14 were cured. In 29 pronounced cases 2 were cured. I do not give a copy of the report; it simply shows, however, that the treatment is certainly worthy of commendation. Mr. Walsham's remarks on the difficulty of carrying out the details is in accord with my own experience, and is as follows:

"Treatment by posture and exercise has many difficulties in out-patient practice. In the first place, it is necessary to instill into the patient or her friends a firm faith in the efficacy of the method itself, or no attempt will be made to carry it out. So imbued are the class of patients generally who apply for relief with the idea that some form of support is necessary for the cure of lateral curvature that evident dissatisfaction is often manifested when they find that a steel instrument, or at least a plaster case, is not prescribed. But, in the second place, even after the necessary enthusiasm for treatment has been awakened, the patients, although willing, are too frequently unable, from want of time or the exigencies of their occupations, to properly pursue it. Much disappointment, principally from the above-mentioned causes, was experienced; and in many cases, as shown above, the treatment appeared to be of little or no service. Where, however, it was faithfully followed, the curves in slight cases rapidly disappeared, and in pronounced cases were greatly improved. In advanced cases little improvement was met with; but, on the other hand, the curves did not get worse, and the health and strength, where there was muscular debility, were benefited."

The important point is to secure correct measurements for record, and there is at present a great need of a good skoliometer. The method advocated by our author is as follows: The patient is stripped to the hips, and, with shoes removed, bends forward at the hips, the knees being kept together and in line with the vertical axis of the limbs. The spinous processes are marked by a dermatograph pencil, and the most prominent point of curvature is taken for a tracing; then, with a strip of lead passing vertically across the body, while the patient bends forward as far as possible, hands toward the head, a strip of lead is folded from the axillary line on one side across the body to the axillary line on the opposite side. The lead terminates at any two given anatomical points. It is perhaps better to measure a certain distance from the spinous processes, and thus have a standard. The point on the lead where the spinal column is crossed is marked, and, on removing the lead, a tracing is taken on the margin of a piece of paper, the number of the vertebra is noted, patient's name, the date, and the two sides. With a pair of scissors this pattern is cut out, folded at the point where the spinous processes are marked, and the difference between the projection of the two sides is thus easily noted. A similar tracing is taken now in the lumbar region, third lumbar vertebra being used, in order to get the compensating curve. These tracings are pasted

with the history, and can be taken again in different stages of treatment. The length of the limbs, the height of the shoulders, and the relative position of the angle of the scapulæ will complete the examination.

As before remarked, I do not propose to give a tabular report of the cases under my care, inasmuch as I have not secured sufficient accurate records. I will take the liberty, however, of presenting a case in the usual style:

A young lady, seventeen years of age, who has been under my care for three years in private practice and about six years in hospital practice, presented at the beginning of the present mode of treatment an unusual amount of rotation in the dorso-lumbar region, with deviation to the right of at least one inch. The chest-walls on the right side projected about one inch further backward than those on the left. The previous treatment in hospital practice was with the Knight brace, which consists of a steel framework with canvas lacing in front, and a leather pad to press against the projecting ribs. In conjunction with this brace treatment she had instructions to exercise on parallel bars once a day, but whether she carried out the instruction or not I am at a loss to say. In June, 1888, she came under my care as a private patient, and I began the use of plaster-of-Paris corsets and self-suspension by means of the Sayre apparatus. This treatment was followed very faithfully. The mother was induced to superintend the exercises daily, and I am confident that none of the instructions were neglected. In 1886, finding no improvement, and at the same time not detecting any increase in the deformity, I combined with the treatment just mentioned the faradaic current to the convex side, and the employment of manual force in the effort to untwist the spine; this was employed three times a week, and the mother was provided with a faradaic machine, with instructions to employ the current every day. In June, 1887, I was unable to note any improvement, although I had been careful to renew her jackets from time to time, and had followed the plan of saving the old ones in order that I might compare results; the effect of this was to find some of the early jackets straighter than some of the later, and, upon the whole, I was not satisfied with my result. I had her photographed at the time in order to keep a more accurate record. In October, however, I discarded the plaster corsets, and began the method now advocated. She has improved in general health; her muscles are in much better condition at present. One would be surprised how much resistance is required to prevent certain of the movements. While the rotation is unaffected, the muscles on the concave side are so much better developed than formerly that the apparent deformity is certainly less. For two or three months now she has felt no need whatever of a jacket; she can take much more exercise than she could formerly, and her back is quite strong.

After having practiced this system for nearly twelve months, I feel prepared to give an opinion as to its merits; at the same time I confess that I have not carried out in all its details the treatment practiced by Mr. Roth, because I have not been able to find the time, and, furthermore, because I lack the enthusiasm that Mr. Roth puts into this work. He devotes nearly all his time to the treatment of lateral curvature, and is not engaged in any hospital work. His ideas of dress-reform differ somewhat from my own in that he lays much stress on loose clothing about the waist and neck, while the patients with us yield very slowly to any suggestions about the garments they wear.

It is my conviction that the improvement one obtains in a given case must depend upon the entire confidence of the patient and friends in the medical adviser, and upon his personal interest in the case.

The real improvement, after all, is in posture. In only two instances have I observed entire correction of the lateral curvature, and in these the deformity was very slight, the lead-tracings being scarcely worthy of record.

The difficulties of carrying out such a course of treatment in hospitals and dispensaries have already been alluded to, and the question whether it is better to apply a plaster corset in such cases is indeed a puzzling one.

It is my intention, however, to give this plan a fair trial in hospital, and I confidently expect to obtain results from this method which, although imperfect, will certainly bear comparison with results obtained by any form of apparatus.

ABSCESS OF THE VESICO-VAGINAL SEPTUM (PYOKOLPOS).

By EGBERT H. GRANDIN, M. D.

THE condition present in the case I propose to report is one not frequently met with. Pus from within the pelvis (pelvic abscess) may burrow its way downward between the rectum and the vagina, or, more rarely still, an abscess in the vesico-uterine space may lead to a collection of pus between the vagina and the bladder. The usual course of events, however, is for the pus to seek an outlet into one of the neighboring organs, if the patient is fortunate enough to escape rupture into the peritoneal cavity.

With instances like the above-mentioned I am not at present concerned, seeing that the abscess, instead of having its source in the pelvis, began primarily in the vesico-vaginal, or rather the urethro-vaginal, septum, and thence worked its way upward toward the vesico-uterine space. As will be noted by those who read the history of my case, the only difficulty presented was one of diagnosis, the condition simulating quite closely cyst of the anterior vaginal wall; and indeed I did not feel justified in excluding this until, at the operation, I was unable to distinguish a cyst-wall from that of the vagina. The course of the case, it must be admitted, speaks for abscess, even though, through an unfortunate oversight, the evidence of a microscopical examination is lacking.

About five years ago Mrs. X. consulted me on account of a protrusion from the vagina which interfered with coitus. She had been married a number of years, but had never conceived. On examination, I found a protrusion of the anterior vaginal wall, just under the course of the urethra, of about the size of a walnut. It fluctuated distinctly and was painful on pressure. She had first noticed it three weeks previously, and considered it due to an accidental blow on the pubes. The sound in the urethra did not enter the protrusion. I diagnosticated a cyst of the vagina, and advised excision. This advice the patient refused to take, and a few days thereafter she told me that it had burst and healed of its own accord.

I lost sight of this patient for two years, when I was informed by her sister that every now and then the "swelling" would recur and rupture. Six months ago the patient consulted

me again, and, on examination, I found a tumor of the anterior vaginal wall extending from the urethro-vaginal junction midway up the vagina. It was tense, fluctuating, and not connected with the bladder. The patient had been told by another practitioner that she had a prolapse of the anterior vaginal wall, and she had returned to me for the purpose of having a pessary inserted. This I declined to do, but again offered to excise the tumor. The patient was averse, however, to any interference whatsoever.

Six weeks ago she returned to me and expressed herself as perfectly willing to be guided by my judgment. Coitus had become practically impossible, and, in addition, a constant dysuria annoyed her exceedingly. On examination, the lumen of the vagina was blocked by a tumor extending from the urethro-vaginal to the cervico-vaginal junction; it was uniformly tense and fluctuating, and again was proved to have no connection with the bladder. I determined to excise the cyst after the late Carl Schröder's method—that is, to remove by the scissors all the projecting part of the cyst, and then unite the mucous membrane of the vagina to that of the cyst, thus turning the latter into the vagina. When I operated I was foiled in my purpose. There existed no cyst-wall that could be distinguished, but the incision led into a cavity between the vagina, the bladder, and the urethra; in other words, instead of the cyst I had expected to find, I was dealing with an abscess of the anterior vaginal wall, which, beginning at the urethral junction, had dissected its way up to the cervico-vaginal junction. I curetted the cavity, using the sharp curette, to remove the pyogenic membrane, and then, as the hæmorrhage was considerable, I loosely tamponed with iodoform gauze. Granulation has been perfect.

This case is recorded not alone because instances of the kind are rather rare, but also because of the difficulty of distinguishing it from one of cyst of the vagina—the only condition with which it was at all allowable to confound it. I am not sure that it may not be deemed by some to have been a cyst which had undergone purulent degeneration. Even so, the case is worthy of record on account of the size which the mass had attained, the impossibility by careful search of eliminating it from the vagina, and, lastly, its probable cause—traumatism.

109 EAST FIFTY-FOURTH STREET.

THE PLASTER-OF-PARIS SPLINT; IMPROVEMENTS BASED UPON PRACTICE.

By MAUS R. VEDDER, M. D.

ALTHOUGH the plaster-of-Paris splint has been used for many years in the treatment of fractures, yet its popularity has varied greatly. In private practice, on account of many difficulties in the way of its successful employment, it has never been extensively adopted. In public practice, because of all the facilities, the requisite number of attendants, and the abundance of time, it has made greater headway toward adoption.

In the teaching of the systematic courses upon minor surgery, this splint has met with qualified approval; but, at the same time, it is usually demonstrated as one of the permissible splints.

In the use of this splint certain modifications and precautions, born of experience in employment, have gradually

suggested themselves, with the result that it is now considered the best splint at the disposal of the surgeon.

In illustrating my views I take for an example a Pott's fracture seen shortly after injury.

After the fracture has been examined and put in position, under ether if necessary, the limb is placed in some wooden extension-splint until the swelling has reached its maximum. The form of the splint is not essential so long as it secures immobilization of the fracture and of the adjacent joints.

The swelling having reached its maximum in twenty-four to forty-eight hours, the plaster-of-Paris splint is now to be applied.

The bandages are best made of crinoline, five yards long by two inches and a half wide, filled with fresh dentist's plaster, as this not only makes a firmer bandage with less plaster, but also sets immediately. The bandage is drawn through the plaster, some being rubbed into the meshes with a spatula, and then rolled somewhat firmly. These bandages can be procured ready prepared at the stores, but better ones can be made at home.

The limb being cleansed, a bicycle stocking is drawn over it as far as the splint is to extend. The advantages of using this stocking, which takes the place of the cotton batting formerly in use, are that it covers the limb smoothly and yet permits a certain amount of swelling without causing discomfort.

The stocking now being wetted, the limb is held in position by an assistant and the wet plaster rolls are put on over the stocking, in the same way as any other roller bandage is put on, no reverses being necessary, as the wet bandage will yield sufficiently. If the bandage is put on evenly, a much thinner one is required than is usually supposed, four or five bandages being sufficient for a splint extending from the metatarso-phalangeal joint of the foot to the middle of the thigh of even a very stout person. Since the bandage is so thin, the limb must be supported until the plaster becomes perfectly dry, or else the under surface will become flattened by pressure, and this, in turn, will produce pressure upon the projecting portion of the limb. The bearing points also must be frequently changed. If no more water than is necessary is used in wetting the bandages, the process of drying lasts but a short time.

In a week or ten days the patient, who, in the mean while, has been permitted to have the freedom of the room, will state that the bandage has become quite loose. The splint is now removed by cutting down the anterior edge with any bandage-shears, a proceeding of no difficulty when a bandage of the proper thinness has been applied, and the splint spread apart and taken away from the limb. The limb will be found to be in good position, and the swelling to be much diminished.

A new splint is applied in the same way as the first, and the patient is given the freedom of the house. When, in the course of the next ten days, the next splint becomes necessary, the old one is removed as before, and the new one is put on.

The splint just taken off is to be further utilized as a removable splint. Without removing any of the cut edge

of the splint, the ends are bound with lamb-skin, and along the cut edge is fastened a series of hooks upon a leather binding, that is kept in place by stitching through the thickness of the splint. This splint is to be laced with a strong lacing, and used when the last permanent splint is taken off. The patient uses it during the day, and takes it off at night, for as long a time as may be necessary.

The great advantage of the plaster-of-Paris splint over the other splints is, that when it is applied in the manner above indicated the deformity is gradually reduced by the continuous, accurately placed, and well-graduated pressure that it furnishes. In fractures near the joints, not only is this method the only one by which perfect apposition is secured, but also a too exuberent formation of the callus, that often interferes with the subsequent motion of the joint throughout the whole of the patient's life, is prevented.

690 MADISON AVENUE, September 1, 1888.

PREDISPOSITION IN TUBERCULOSIS.

By T. L. DIX, M. D.,

SHELBYVILLE, KY.

DR. COUNCILMAN, in his address on "Predisposition in Tubercle," as published in the April 21st number of this Journal for 1888, although able and suggestive, fails to demonstrate that condition of the system which invites and favors the deposition of tubercle.

The object of this paper is to discover a condition of the system and its antecedents that will account for all the phenomena presented in Dr. Councilman's address. And if we succeed in this, the cause and effect in tubercle will be demonstrated beyond question.

We will first consider the philosophy of the relation of cause to effect.

Cause is made up of a train of antecedents which consist of circumstances and conditions, and the character of these must be such as to render them efficient to produce the expected effect. In illustration, a man falls from a scaffold and is killed. The factors that make up this cause consist in concussion (circumstance), the hardness of the surface upon which he fell, and the friability of his body (conditions); the breaking of a timber in the scaffold (circumstance), weakness of the timber (condition). Here we have circumstances and conditions which pertain to the concussion and those which pertain to the scaffold. Let it be observed that those which pertain to the scaffold may be materially altered without producing any effect upon those which pertain to the concussion. Instead of the breaking of the scaffold, let a banana-peel be dropped upon which the man treads, slips, and falls. Here we have the presence of the peel, the step, and slip (circumstances); the sleekness of the peel (condition). It will be readily seen that if one of the circumstances should fail to occur, or a change of condition take place, as if the place upon which the man falls should be soft instead of hard, the cause would be inadequate to the killing, and, consequently, the latter would not obtain.

We propose to account for all the phenomena connected with tubercle and its treatment upon the hypothesis that it is the result of fibrin changed by oxidation into casein, and the fibrinous dyscrasia to be the result of inherited large lung capacity and a predominance of the arterial over the venous system—progressive metamorphosis; or the breaking down of fibrous tissue—retrogressive metamorphosis. The former is inherited, the latter acquired, tuberculosis.

Since we find the growth and decay of the forest tree, the plowing of the mighty deep by the steamer, the upheaval of mountains, the belching forth from the crater of fire, smoke, and sulphurous fumes, the hurling of huge balls against the rock-bound fort and the noble man-of-war, the destruction of Sodom, man's existence and decay, and the growth of animalcula in a mixture of straw and water—all to be phenomena called forth by the simple process of oxidation; and oxygen to be profusely distributed and ready to combine with every substance, it is not at all surprising to find tubercle to be a result of oxidation. For proof of this and many other particulars which bear directly upon this subject, and to save the reproduction of that which has already been written, the reader is referred to an article by the writer "On the Correlation of Alcohol, Rheumatism, and Phthisis," August 15th number of this Journal of 1885, also April 28th number of 1888. Presuming the reader has these two articles fresh in mind and a comprehension of their teachings, we will consider Dr. Councilman's address and quote from him as follows:

1. "We may now define tuberculosis as an infectious disease produced by the tubercle bacillus."

2. "That tuberculosis is an infectious disease, and that the tubercle bacilli are the infecting agents, are facts too well established to need further discussion."

3. "The fact that there is often a greater mortality in cases at the beginning of an epidemic than at its termination may be explained by the fact that the most susceptible were first attacked, and, finally, only those are left who naturally have a greater resisting power."

4. "There is no condition in which the effect of different degrees of resisting power is better seen than in the various forms of pulmonary phthisis, and this is in great part shown by the varying extent of connective-tissue formation. In one case we see a great deal of connective tissue formed around cavities, around areas of tubercular pneumonia, and around miliary tubercles, by which certain limits are set to the advance of the disease, or at least its advance is retarded. In other cases scarcely anything of this is seen, and the disease takes the form of a rapidly advancing inflammation with caseation."

5. "There are few ideas in medicine more firmly rooted than that there exists in all cases of tuberculosis a special predisposition of the tissue for the disease; this predisposition we can only regard as some condition of the cells or fluids of the body which favors the growth of the bacillus."

6. "That the soil in which the bacteria grow does exert some influence on their growth there can be no doubt." "The cases which we have been speaking of—those cases which have been designated *latent tuberculosis*—are examples of the disease on, for it, unfavorable soil." "They

are hardly to be explained under any other theory than that there is in these cases some condition of the tissue by which a greater resistance to the growth of the bacilli is offered."

7. "And few facts are better established than that in the vast majority of tuberculous individuals a family history of the disease may be obtained."

8. "We are convinced, however, that the importance of this family history as showing that some special condition of the tissues, something analogous to a peculiarity of feature or expression, is transmitted, has been very greatly overestimated."

9. "It is a matter of common experience that all conditions of life which produce a low state of vitality in the system predispose to tuberculosis."

10. "The oft-cited Brompton Hospital, in which, notwithstanding the number of tuberculous patients, there were no cases of infection among the house-staff and attendants, only shows that the general health of the attendants must have been excellent, or that the hygienic regulations were good."

11. "Infection seems to take place more readily after certain diseases, especially after measles."

12. "We can not suppose that mountain air can exert any lethal influence on the organisms themselves, but, in placing the individual under better hygienic relations, we raise the resisting power of his tissues."

13. "In cases of primary tuberculous lesions of the bones in children, we can scarcely understand, from our present knowledge of the disease, how the infection could take place."

14. "Various attempts have been made to find some condition of the body which could be pointed out as the mark of the tuberculous diathesis."

As regards the first quotation, tubercle must in the nature of things bear the same relation to the bacillus as the corpse does to the larvæ of the *Sarcophaga mortuorum*, and therefore can not be regarded as a product of the bacilli.

The second states a circumstance that is analogous to other phenomena, as a decayed apple infects sound ones, or as tainted meat infects the fresh. It is, therefore, beyond question that the halitus of a consumptive patient will infect a healthy person, provided that one is in a condition to become infected, having caseous matter within the system. But the circumstance can in no wise occur unless the corresponding condition exists.

3. "The most susceptible" are those who are in the highest state of fibrinosis, and therefore present the most favorable condition for infection, whereas those who are in a lower state are the most slow to partake of the infection; and those so fortunate as to have the process of oxidation and the supply of albuminous or nitrogenous food in such proportions as will meet the demand of the economy for fibrin, and not producing an excess, will in no degree be possessed of the condition for infection, and will, therefore, escape.

4. This quotation clearly sets forth the consequence of medication or change of those conditions which lessen fibrinous oxidation, which results in tissue formation, and healing of the tubercular lesion.

5. In this quotation it is difficult to understand what is meant by the "predisposition of the tissue for the disease; . . . this predisposition we can only regard as some condition of the cells or fluids of the body which favors the growth of the bacillus." Let it be remembered, as shown in former articles, that fibrin is the product of both progressive and retrogressive metamorphosis; and the writer has previously shown many examples of tuberculosis as the result of retrogressive metamorphosis, the breaking down of fibrous tissue, and the consequent presence in the blood of a superabundance of fibrin, which, by further oxidation, results in casein or tubercle. This "special predisposition of the tissue for the disease" prevails to a greater degree in those cases of retrogressive than in those of progressive metamorphosis.

6. Soil is a condition that exerts a marked influence upon growth. The more slowly fibrin is supplied for the formation of the casein, the more slowly will the tubercular deposits take place; and that "condition of the tissue" consists in the retrogressive metamorphosis by which an excess of fibrin is thrown into the blood.

7. The heredity of phthisis consists in the transmission to the offspring of a predominance of the arterial over the venous circulation, which consists in large lung capacity and distribution of arterioles. In this connection let it be observed that the father exerts his influence upon the animal construction, whereas the mother's influence predominates in the organic construction, in the offspring. This is illustrated in the mule and hinny. Dr. Carpenter refers to the mule as a "*modified ass*," and the hinny as a "*modified horse*," the former having the physical construction of the ass, with a large body and head for the accommodation of the large vital organs of the mare, whereas the hinny is physically constructed more after the horse, but has a small body and head to meet the diminutive vital organs of the she ass. It is for this reason that diseases of the vital organs are more frequently transmitted by the mother to the offspring than by the father. The transmission of tuberculosis does not consist in the transmission of the disease *per se*, but of that physical construction which favors fibrinosis. This construction of the vital organs is hereditary, and of such parents we find consumptive children; consequently we have a family history. However, a child may be born of such parents and escape such a vital construction, while, upon the other hand, a child may be born of parents without such a family history, and yet be possessed of an organism highly fibrinous and perish of tuberculosis. This fibrinous construction may run out during a generation or more, and again, upon the principle of atavism, reappear. This accounts for the jumping over and the reappearing of the disease in the line of progenitors.

8. This overestimation is due to the fact that tuberculosis does not depend upon the condition of the tissue nor upon peculiarity of feature or expression, but upon fibrinosis.

9. This is so largely dwelt upon in the article to which reference has been made that we will not consider it in this connection.

10. This simply shows that the attendants did not possess the conditions adequate to contract the disease.

11. Certain diseases, especially measles, supply to the blood fibrin as the product of retrogressive metamorphosis as one of the conditions for tuberculosis.

12. For the manner in which mountain air effects the cure of tuberculosis the reader is referred to the April 21st number of this Journal for 1888.

13. Infection is not a *sine qua non* to the production of the disease. This finds illustration in persons who die in midwinter and during intense cold, and are buried. After a few months the body is disinterred and found to contain the larvæ of the *Sarcophaga mortuorum*. The fly did not exist during the cold weather, and when it did exist during the warm weather, how did it find a way to the corpse? But this rule does not hold good with tubercular bacilli and with the larvæ, for it appears that, however deep-seated the lesion may be, there the bacilli will be found; and however cold the weather may be at the time of death, and however deep and securely we may bury the dead, the larvæ will there be found. From these circumstances it may be reasoned that the tubercle produces the bacilli and the corpse the larvæ.

14. This is clearly pointed out by Rokitsansky.

In conclusion, we will sum up the circumstances and conditions under which tuberculosis makes its appearance.

1. Tubercle is casein mingled with adventitious cells. (Condition.)

2. Casein is the product of fibrin and oxygen. (A circumstance.)

3. Fibrin is held in solution by the blood in excess—fibrinous blood. (A condition.)

4. Fibrin is the product of albuminous or nitrogenous food and oxygen. (Circumstance.)

5. Fibrin becomes excessive in the blood through two methods, viz.:

1. Arteriosis, or progressive metamorphosis—tissue formation.

2. The rapid breaking down of fibrous tissue—retrogressive metamorphosis. (Circumstance.)

The first of these constitutes the inherited type of the disease, and the second the acquired form, although they may appear in the reverse order.

These circumstances and conditions are the ones, and the only ones, essential to the production and continuance of tubercle, and form the hypothesis upon which every particular concerning the rational treatment of the disease is founded.

Now, when we turn to the treatment of the disease we find that the foregoing hypothesis forms the basis for all useful agents, and these consist in the production of cyanosis. For instance, the carbohydrates consume the oxygen; abstaining from nitrogenous food lessens the fibrin; breathing the attenuated mountain air lessens the amount of oxygen taken into the lungs; rest lessens the disintegration of fibrous tissue as well as the amount of air taken into the lungs.

Whatever there is to be accomplished for the good of humanity in the way of preventing and curing the disease is to be attained by a continuance of this line of thought and based upon the hypothesis as above set forth.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 15, 1888.

THE MEDICAL EDUCATION OF THE LAITY.

WE would not be understood as about to introduce a plea for the popularizing of medical instruction. On the contrary, we believe that nothing is more mischievous than the attempts of non-professional writers to impart a smattering of medicine to the general public. The daily journals minister to the curiosity of their readers by entering into the minutest details regarding the illnesses of public men, the reports of the attending physicians being frequently expanded and embellished in the most fanciful and inaccurate manner. It thus happens that every lay reader naturally constitutes himself a medical critic, and comes to believe that he is as well informed regarding the case as the attendants—and even better. Thus the illness of Garfield afforded an opportunity for exhaustive journalistic instruction on the subject of pyæmia, while the subsequent death of two prominent personages from malignant disease gave the public a chance to learn much that was curious and hitherto (and is still) unknown about cancer. Indeed, there were not wanting numerous non-medical readers who, following the example set by their favorite newspaper, felt fully competent to criticise unfavorably the gentlemen who ministered so wisely at the bedside of the hero of Winchester. So the work of instructing the masses in the mysteries of medicine goes joyously on, until we may hope that all will “be as gods, knowing good from evil.”

But, one of the most active educators in this department of science is the modern novel. It is a singular fact that the ablest novelists, whose character-studies are otherwise recognized as perfectly true to nature, whenever they approach the subject of medicine or medical men, invariably draw on the imagination. There is a dreary monotony about the doctor of fiction. He is a fiction indeed, always appearing and disappearing in a blaze of blue fire, like the stage villain. He is never passive, always endowed with supernatural powers and a supreme confidence in them—a veritable Monte Cristo. The patient, on the other hand, is always in desperate straits, and, after hovering between life and death, is miraculously snatched from the grasp of the fell destroyer through either a wonderful surgical operation or a single dose of some powerful drug, interposed just at the critical moment. When we reflect that from these two sources, the novel and the newspaper, the public, the wise as well as the unlearned, derive most of their knowledge of the healing art, we must admit that such distorted teaching “tends to invest the practice of medicine with an unworthy mystery.”

What the laity need is not to be more thoroughly instructed in medical science, but to be taught to distinguish between the

true and the false, between the charlatan and the honest, conscientious physician. This task will take more than one generation, and will only be accomplished through the influence of the profession, who, it must be confessed, too often encourage the ignorance which they ought to enlighten. It seems as if men loved to be humbugged now almost as well as in the dark ages, to judge by the success which still attends any medical adventurer whose pretensions are sufficiently extravagant to attract general attention. The promise of a “cure,” and not an honest opinion, is what the patient seeks when he consults a specialist, and such is the “competition,” we are ashamed to admit, that if he consults one gentleman unsuccessfully, it is more than likely that the next one will gratify him. As we have before stated, men who possess more than the usual amount of intelligence and common sense are often singularly warped in their judgment when they consider medical matters. Whatever opinions they may hold on other subjects, they are ready to defer to the superior knowledge of those who have made a special study of such subjects, but in their peculiar theories on medicine they will yield to no one, not even to the physician. The *vis medicatrix naturæ* is an absurdity to the laity; they expect the doctor to triumph over nature, or at least to pretend to do so. The same is true with regard to medication. “In the popular mind,” says an eminent writer, “the practice of medicine is too closely connected with the use of drugs. . . . It is desirable for the public to understand that the proper office of the physician is to observe cases of disease, and to either prescribe or withhold remedies according to the indications.” The medical education of the laity will be complete when this truth has once been grasped. It will cause an entire change in the present attitude of the physician toward his patient. The former, instead of assuming a knowledge which he does not possess, will venture to express his honest doubt occasionally, and, while he promises less, will feel that he still retains the confidence of his patient, who will understand that greater learning leads to greater humility. The conscientious beginner may then feel that success in medicine is to be attained by a frank and open expression of opinion with regard to his patient's case, instead of by adopting the method of promising everything and performing little. Let the word “cure” be less frequently on the lips of the educated physician, and it will be less often demanded by the public as the sole testimony of professional success. We shall succeed in educating our patients to take a common-sense view of medicine only when we are ourselves honest and free from pedantry. We do not try to impose superficial knowledge upon our *confrères*—why do we endeavor to deceive the laity?

MINOR PARAGRAPHS.

THE OTHER SIDE OF THE QUESTION.

THE demands of the public for information as to the condition of or changes for better or worse in a “distinguished patient” are so strong that the temptation to advertise by means of the “medical bulletin” is beyond the power of resistance of, we are sorry to say, the majority of practitioners. Nor is

the sacredness of the death-bed proof against the inquisitive obtrusiveness of the insatiable reporter, whose fertile imagination converts fancy into fact, in the absence of definite information, and supplies the missing links in a chain of symptoms which establish in his mind, at least, both diagnosis and prognosis, and forthwith appears in the newspaper a full and correct (?) account of Mr. So-and-so's condition. There is happily, however, another side to the question—a side in which the secrets of the sick-room are zealously guarded. It is extremely gratifying to find a physician who has the moral courage and the firmness to resist the demands of the public and to repel the intrusiveness of reporters, and who is also proof against the "bulletin" temptation. Such a man Dr. William Ingalls, of Boston, has shown himself to be in his management of the case of a distinguished actor now, probably, on his death-bed. Not only has Dr. Ingalls refused to give public announcement of his diagnosis, but he has also declined to state, for the benefit of the public, the patient's condition. We commend Dr. Ingalls's course as one worthy of imitation by the profession at large.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 11, 1888:

DISEASES.	Week ending Sept. 4.		Week ending Sept. 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	35	11	73	15
Scarlet fever.....	62	9	60	23
Cerebro-spinal meningitis....	1	1	2	2
Measles.....	75	9	68	6
Diphtheria.....	75	23	52	13
Small-pox.....	0	1	0	0

The Health of New York City.—During the four weeks ending Tuesday, September 11th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 171 cases and 41 deaths; scarlet fever, 291 cases and 64 deaths; cerebro-spinal meningitis, 7 cases and 5 deaths; measles, 361 cases and 37 deaths; diphtheria, 268 cases and 91 deaths; small-pox, 2 cases and 1 death.

The Franklin, Vt., County Medical Society will hold its annual meeting at Sheldon Junction on Tuesday, the 25th inst.

The New York Polyclinic.—The Seventh Annual Announcement shows an attendance of 337 practitioners for the session of 1887-'88. The only changes in the faculty are the appointments of Dr. Charles Stedman Bull as professor of ophthalmology and of Dr. Henry N. Heineman as professor of general medicine. The session of 1888-'89 will open on the 24th inst.

The Congress of American Physicians and Surgeons.—In previous issues we have published the substance of the preliminary programmes of the first triennial meeting, to be held in Washington, on Tuesday, Wednesday, and Thursday of next week. The completed programme has now been issued by the secretary. The officers of the congress are as follows: President, John S. Billings, M. D., LL. D., U. S. Army; Vice-presidents, ex-officio, the president of the American Surgical Association, D. Hayes Agnew, M. D., of Philadelphia, the president of the American Association of Genito-urinary Surgeons, Edward L. Keyes, M. D., of New York, the president of the American Laryngological Association, Rufus P. Lincoln, M. D., of New York, the president of the American Climatological As-

sociation, Alfred L. Loomis, M. D., LL. D., of New York, the president of the Association of American Physicians, William H. Draper, M. D., of New York, the president of the American Otolological Society, Jonathan S. Prout, M. D., of Brooklyn, the president of the American Ophthalmological Society, William F. Norris, M. D., of Philadelphia, the president of the American Neurological Association, James J. Putnam, M. D., of Boston, the president of the American Dermatological Association, I. E. Atkinson, M. D., of Baltimore, the president of the American Physiological Society, Henry P. Bowditch, M. D., of Boston, and the president of the American Orthopædic Association, Newton M. Shaffer, M. D., of New York; Chairman of the Executive Committee, William Pepper, M. D., LL. D., of Philadelphia; Secretary and Acting Treasurer, William H. Carmalt, M. D., of New Haven.

The associations and societies are represented as follows on the Executive Committee and on the Committee of Arrangements, respectively: American Surgical Association, Dr. Claudius H. Mastin, of Mobile, Dr. J. Ford Thompson, of Washington; American Association of Genito-urinary Surgeons, Dr. John P. Bryson, secretary, of St. Louis, Dr. A. T. Cabot, of Boston; American Laryngological Association, Dr. J. Solis-Cohen, of Philadelphia, Dr. E. C. Morgan, of Washington; American Climatological Association, Dr. Alfred L. Loomis, of New York, Dr. W. W. Johnston, of Washington; Association of American Physicians, Dr. William Pepper, chairman, of Philadelphia, Dr. Samuel C. Busey, chairman, of Washington; American Otolological Society, Dr. William H. Carmalt, of New Haven, Dr. S. O. Richey, of Washington; American Ophthalmological Society, Dr. William F. Norris, of Philadelphia, Dr. Samuel Theobald, of Baltimore; American Neurological Association, Dr. Landon Carter Gray, of New York, Dr. Robert T. Edes, of Washington; American Dermatological Association, Dr. I. E. Atkinson, of Baltimore; American Physiological Society, Dr. Henry P. Bowditch, of Boston, Dr. H. Newell Martin, of Baltimore; American Orthopædic Association, Dr. Newton M. Shaffer, of New York, Dr. A. Sidney Roberts, of Philadelphia.

The sessions of the congress, except the preliminary one for organization, will be held during the evenings, beginning at 8 o'clock p. m. On the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last, Thursday evening, in the hall of the National Museum. During this evening the Army Medical Museum and Library building, alongside of the museum building, will be lighted and opened for the inspection of the members and invited guests. The sessions of the congress will be open to the profession. The meetings of the societies will be held during the day, according to the programme each may respectively provide. Members and guests are requested to register at the office of registration, Willard's Hotel. Ladies of the families of members and guests are cordially invited to listen to the address of the president, and to be present at the reception following. The preliminary meeting to receive the report of the Executive Committee, and for organization, will be held on Tuesday, September 18th, at 1 p. m., in the main hall of the Grand Army Building.

On Tuesday evening, in the main hall of Grand Army Building, papers on "Intestinal Obstruction in its Medical and Surgical Relations" will be read by Dr. Reginald H. Fitz, of Boston, and Dr. Nicholas Senn, of Milwaukee, followed by a discussion in which Dr. William Pepper, Dr. J. Collins Warren, Dr. Thomas G. Morton, and others will take part. On Wednesday evening, at the same place, papers on "Cerebral Localization in its Practical Relations" will be read by Dr. Charles K. Mills, of Philadelphia, and Dr. Roswell Park, of Buffalo, followed by

a discussion in which Dr. David Ferrier, Mr. Victor Horsley, Dr. W. W. Keen, Dr. E. C. Seguin, Dr. Robert F. Weir, and others will take part. On Thursday evening, in the hall in the National Museum, Smithsonian Grounds, the address by the president, "On Medical Museums," will be delivered, to be followed by a general reception in the United States Army Museum Building.

The programme of the AMERICAN SURGICAL ASSOCIATION (meeting in the main hall of the Grand Army Building) is as follows: Tuesday—Session at 10 A. M. Roll call; the address by the president, Dr. D. Hayes Agnew, of Philadelphia; executive session; "Excision in Articular Disease," by Dr. John Ashhurst, Jr., of Philadelphia (synopsis: Table of 120 cases of excision of the larger joints, from Dr. Ashhurst's practice, with remarks on the operative method, the after-treatment, and the limitations of applicability of the operation in reference to the several joints—the discussion to be opened by Dr. Lewis A. Sayre, of New York, Dr. R. A. Kinloch, of Charleston, Dr. T. F. Prewitt, of St. Louis, and Dr. F. S. Dennis, of New York); "The Relation of Micro-organisms to Injuries and Surgical Diseases," by Dr. Nicholas Senn, of Milwaukee (synopsis: 1. Hereditary transmission of microbic diseases. 2. Do pathogenic micro-organisms exist in the healthy body? Yes, under certain circumstances. 3. Sources of infection. 4. Localization of micro-organisms. Localization of microbes in antecedent pathological products. 5. Elimination of pathogenic micro-organisms. *a.* Phagocytosis. *b.* Elimination of microbes through the kidneys and other excretory organs. 6. Antagonism among micro-organisms. 7. Inflammation. *a.* Simple or plastic. *b.* Infective or destructive. 8. Suppuration. Description of the different kinds of pus microbes. Experimental and clinical evidences that pus microbes are the cause of suppuration. The relation of ptomaines to suppuration. Can suppuration be produced by chemical irritants? Pus microbes in different suppurative affections. 9. Gangrene. *a.* Microbic embolism or thrombosis. *b.* Copious inflammatory exudation. *c.* Destruction of tissues by ptomaines. 10. Septicæmia. History. Artificial septicæmia in animals. Septic intoxication in animals by the introduction of putrid substances and toxic alkaloids. Kryptogenic septico-pyæmia. 11. Pyæmia. The artificial production of pyæmia in animals. The relation of pus microbes to pyæmia in man. 12. Erysipelas. The relation of erysipelas to puerperal fever and other septic processes. The relation of erysipelas to phlegmonous inflammation and suppuration. 13. Erysipeloid. 14. Noma. 15. Tetanus. The ptomaines of the *Bacillus tetani* cause tetanic convulsions. 16. Tuberculosis. Tubercular infection of wounds. Inoculation following circumcission. Clinical forms of surgical tuberculosis. 17. Anthrax. Attenuation of virus. Intensification of virus. Anthrax infection in man and clinical varieties. 18. Glanders. 19. Actinomyces hominis. 20. Gonorrhœa. Action of the gonococcus on the tissues. The gonococcus and purulent ophthalmia. The gonococcus in abscesses. Diagnostic value of the gonococcus. 21. Syphilis. Bacteriological and experimental study of syphilis. The bacillus of smegma. Secondary infection of syphilitic lesions with pus microbes. 22. On the alleged microbic origin of tumors—the discussion to be opened by Dr. Roswell Park, of Buffalo, Dr. W. H. Carmalt, of New Haven, and Dr. J. Collins Warren, of Boston); "Cerebral Localization: its Relation to Operative Surgery," by Dr. Stephen Smith, of New York; "Three Cases of Brain Surgery," by Dr. W. W. Keen, of Philadelphia; "Certain Indications for Trephining, and their Comparative Value," by Dr. J. W. White, of Philadelphia (the discussion of the papers by Dr. Smith, Dr. Keen, and Dr. White to be opened by Dr. C. B. Nancrede, of Philadelphia, Dr. M. H. Richardson, of Boston, Dr. John B. Roberts, of Phila-

delphia, Dr. Joseph Ransohoff, of Cincinnati, Dr. W. G. Porter, of Philadelphia, Dr. Christopher Johnston, of Baltimore, Dr. P. S. Connor, of Cincinnati, and Dr. D. W. Cheever, of Boston).

Wednesday—"The Choice of Operation for Vesical Calculus," by Dr. Hunter McGuire, of Richmond; "Suprapubic Cystotomy," by Dr. John H. Packard, of Philadelphia (the discussion on the papers by Dr. McGuire and Dr. Packard to be opened by Dr. S. W. Gross, of Philadelphia, Dr. D. W. Yandell, of Louisville, Dr. William T. Briggs, of Nashville, and Dr. A. Vanderveer, of Albany); "Forty Years of Chloroform and Ether in Louisville, Ky.," by Dr. D. W. Yandell, of Louisville (synopsis: When first used; by whom; in what cases; results; struggles; opposition to both; death from; circumstances of. The agent now used; general opinion of the relative safety of the two; the conditions in which one or the other is preferred—the discussion to be opened by Dr. Hunter McGuire, of Richmond, Dr. E. M. Moore, of Rochester, Dr. Charles T. Parkes, of Chicago, Dr. W. W. Dawson, of Cincinnati, and Dr. C. H. Mastin, of Mobile); "The Surgical Management of Typhlitis and Perityphlitis," by Dr. W. T. Bull, of New York; "The Propriety of Surgical Interference in Perforating Typhoid Ulcer," by Dr. J. Ewing Mears, of Philadelphia (the discussion of the papers by Dr. Bull and Dr. Mears to be opened by Dr. T. G. Morton, of Philadelphia, Dr. J. Ford Thompson, of Washington, Dr. F. S. Dennis, of New York, and Dr. B. A. Watson, of Jersey City); "Report of a Case of Simultaneous Ligation of the Right Carotid and Subclavian Arteries for Aneurysm of the Innominate," by Dr. John H. Packard, of Philadelphia.

Thursday—"Hernia: its Treatment," by Dr. C. H. Mastin, of Mobile (the discussion to be opened by Dr. L. McLane Tiffany, of Baltimore, Dr. H. H. Mudd, of St. Louis, and Dr. J. E. Michael, of Baltimore); "The Comparative Merits of Tracheotomy and Intubation in the Treatment of Croup," by Dr. George W. Gay, of Boston; "Pregnancy and Operative Surgery: their Mutual Relations," by Dr. L. McLane Tiffany, of Baltimore (conclusions: 1. Pregnancy is a physiological condition, and does not contra-indicate a surgical operation. 2. During pregnancy, temporary strain may be exerted on some organ—*e. g.*, the kidney, inducing impairment of function. 3. A surgical operation upon a pregnant woman is to be conducted so as to avoid inducing abortion, in itself a serious accident. 4. The main cause of abortion after operation is sepsis. 5. The probability of sepsis after operation is increased if the patient is suffering from disease, either temporary or chronic. 6. Abortion may result from operation—shock, perhaps. 7. Hæmorrhage does not seem to induce abortion. 8. Union of fracture may be retarded by pregnancy. 9. Recorded cases show that the unborn child receives no evil impress when the mother is subjected to operation. 10. When a surgical operation upon a pregnant woman is under consideration, the function of all the patient's organs must be carefully investigated and regulated; an operation then, conducted antiseptically, may be expected to result as though pregnancy were not present—the discussion to be opened by Dr. Donald Maclean, of Detroit, Dr. J. Ewing Mears, of Philadelphia, Dr. E. M. Moore, of Rochester, and Dr. D. W. Yandell, of Louisville); "Nerve Stretching," by Dr. N. P. Dandridge, of Cincinnati (the discussion to be opened by Dr. W. W. Keen, of Philadelphia, Dr. T. G. Richardson, of New Orleans, Dr. John Ashhurst, Jr., of Philadelphia, and Dr. T. A. McGraw, of Detroit); "Nephrectomy for Gunshot Wound," by Dr. DeForest Willard, of Philadelphia (synopsis: Abdominal and dorsal incisions; treatment of hæmorrhage and hæmatocele; drainage; urinary functions, etc.—the discussion to be opened by Dr. W. W. Keen, of Philadelphia); "Shock," by Dr. David W. Cheever, of Boston.

The programme of the AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS (meeting at Willard's Hotel) is as follows: Tuesday—Address of Welcome, by the President, Dr. Edward L. Keyes, of New York; "Pyæmia as a Direct Sequel of Gonorrhœa," by Dr. Roswell Park, of Buffalo; "Clinical Observations on Gonorrhœa, with Special Reference to Ætiology, Duration, and Treatment," by Dr. John P. Bryson and Dr. Edwin C. Burnett, of St. Louis; "Retrojections in Gonorrhœa," by Dr. Edward R. Palmer, of Louisville; "The Local Treatment of Chronic Urethral Discharges," by Dr. Frederick R. Sturgis, of New York; "On the Relation of the Prostate to Chronic Urethral Discharges," by Dr. J. William White, of Philadelphia; "The Diagnosis and Treatment of Chronic Urethritis, with Demonstrations and Instruments," by Dr. Oberländer, of Dresden, Germany (to be read by Dr. John B. Fordyce); "The Connection between Masturbation and Stricture of the Urethra," by Dr. Samuel W. Gross, of Philadelphia; "The Curability of Urethral Stricture by Electricity: an Investigation," by Dr. Edward L. Keyes, of New York; "On the Radical Cure of Stricture of the Urethra by Dilating Urethrotomy," by Dr. Fessenden N. Otis, of New York; "The Prognosis of Stricture, based on Thirty Years' Death Record at the London Hospital and the Practice at St. Peter's Hospital," by E. Hurry Fenwick, F. R. C. S., of London, England; "Some Points on the Ætiology of Stricture of the Urethra," by Dr. Robert W. Taylor, of New York.

Wednesday—"The Operative Treatment of Hypertrophy of the Prostate, with Stereopticon Demonstrations of Specimens," etc., by Dr. Francis S. Watson, of Boston; "Prostatotomy for Enlarged Prostate at the Age of Forty-two Years," by Dr. Abner Post, of Boston; "The History of the *Filaria Sanguinis Hominis*: its Discovery in the United States, and especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis," by Dr. William M. Mastin, of Mobile; "Clinical Observations on Diseases of the Testicle," by Dr. L. Bolton Bangs, of New York; "Case of Removal of Both Testicles for Recurrent Carcinoma," by Dr. Frank W. Rockwell, of Brooklyn; "Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and Other Instruments," by Dr. Alexander W. Stein, of New York; "Demonstration of a Perfected Evacuator and an Improvement in the Method of Removal of Débris from the Bladder," by Dr. Fessenden N. Otis, of New York; "Stone in the Bladder in Connection with Splenic Leukæmia," by Charles Williams, F. R. C. S., of Norwich, England; "Litholapaxy in Male Children," by Surgeon-Major Keegan, of Indore, Central India; "Case of Perineal Section for Traumatic Retention—Unusual Condition of the Bladder," by Dr. J. E. Michael, of Baltimore.

Thursday—"Operations on the Kidney," by Dr. William H. Hingston, of Montreal, Canada; "On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis," by Dr. George Chismore, of San Francisco; "Case of Nephrolithiasis complicated with Hydronephrosis, in which Lumbar Nephrotomy was performed," by Dr. Frank W. Rockwell, of Brooklyn; "Malignant Tumors of the Seminal Vesicles: Two Cases, with Specimens," by Dr. John P. Bryson, of St. Louis; "Case of Bowel Ending in the Urethra of a Child Four Weeks Old—Relief by Operation," by Dr. Arthur T. Cabot, of Boston; "Unusual Case of Urethral Calculus," by Dr. Harvey G. Mudd, of St. Louis; "The Congenital Anomalies of the External Urethral Orifice," by Dr. C. Kaufmann, of Zürich, Switzerland; "The Prophylaxis of Syphilis," by Dr. Prince A. Morrow, of New York; "Syphiloma of the Vulva," by Dr. J. Nevins Hyde, of Chicago; "The Value of the Tolerance of the Iodides in the Diagnosis of Syphilis," by Dr. J. William White, of Philadelphia.

The programme of the AMERICAN LARYNGOLOGICAL ASSOCIATION (meeting in hall No. 3, Grand Army Building) is as follows: Tuesday—Address of Welcome, by Dr. E. Carroll Morgan, of Washington; the President's Address, "A Decade of Laryngology," by Dr. Rufus P. Lincoln, of New York; "Imaginary Lingual Ulceration," by Dr. George M. Lefferts, of New York; "A Case of Subglottic Chronic Stenosis of the Larynx treated by Dilatation," by Dr. Frank Donaldson, of Baltimore; "Case of Stenosis of the Larynx and Trachea," by Dr. Carl Seiler, of Philadelphia; "A Specimen of Stricture of the Larynx with Extensive Cicatrization, from Ulcerative Tuberculosis," by Dr. J. Solis-Cohen, of Philadelphia; "A possible Substitute for Tracheotomy and Intubation in Certain Cases," by Dr. Edgar Holden, of Newark; "Residence at certain Great Altitudes as a Means of Cure for Laryngeal Phthisis," by Dr. Clinton Wagner, of New York; "Internal Œsophagotomy; with Report of Successful Cases," by Dr. John O. Roe, of Rochester; "On a hitherto undescribed Neurosis of the Aural Apparatus, closely allied to Coryza Sympathetica," by Dr. John N. Mackenzie, of Baltimore; "Further Investigations as to the Existence of a Cortical Motor Center for the Human Larynx," by Dr. D. Bryson Delavan, of New York.

Wednesday—Discussion: "Dyspepsia as Reflected in the Mucous Membrane of the Upper Air-passages"; "The Anatomy of the Nasal Chambers," by Dr. Harrison Allen, of Philadelphia; "The Treatment of Atrophic Rhinitis by the Galvanic Current," by Dr. J. H. Hartman, of Baltimore; "Notes on a Case of Nasal Caries, complicated with Meningitis, successfully treated by means of the Surgical Drill," by Dr. W. C. Jarvis, of New York; "A Photographic Study of the Laryngeal Image during the Formation of the Registers and the Production of Vibrations in the Pitch of the Singing Voice," by Dr. Thomas R. French, of Brooklyn; "Congenital Bony Occlusion of the Posterior Nares," by Dr. C. H. Knight, of New York; "Antiseptic Nasal Surgery," by Dr. Clarence C. Rice, of New York.

Thursday—"The Treatment of some forms of Hoarseness," by Dr. O. E. Sajous, of Philadelphia; "The Cure of the Falsetto Voice," by Dr. J. C. Mulhall, of St. Louis; "Subglottic Laryngeal Enchondroma," by Dr. E. Fletcher Ingals, of Chicago; "A Case of Sarcoma of the Tonsil," by Dr. Alexander W. MacCoy, of Philadelphia; "A Specimen of Laryngeal Papilloma from a Child," by Dr. S. W. Langmaid, of Boston; "Lupus of the Nose, Pharynx, and Larynx," by Dr. Samuel Johnston, of Baltimore; "The Effects of varying rates of Stimulation on the Action of the Recurrent Laryngeal Nerve," by Dr. Franklin H. Hooper, of Boston; "A Contribution to the Physiology and Pathology of the Recurrent Laryngeal Nerve," by Dr. F. Donaldson, Jr., of Baltimore; "Report of Cases of Pharyngeal and Laryngeal Paralysis due to Bulbar Lesion," by Dr. F. H. Bosworth, of New York.

The programme of the AMERICAN CLIMATOLOGICAL ASSOCIATION (meeting in hall No. 2, Grand Army Building) is as follows: Tuesday—The President's Address, by Dr. A. L. Loomis, of New York; "A Study of the Climate of Colorado as applied to the Arrest and Cure of Pulmonary Disease," by Dr. S. A. Fisk, of Denver; "Invalids suited for Treatment at Colorado Springs," by Dr. S. E. Solly, of Colorado Springs; "Is Climate an Ætiological Factor in Graves's Disease?" by Dr. R. G. Curtin, of Philadelphia; "Health Resorts *vs.* Institutions for the Treatment of Pulmonary Consumption," by Dr. P. H. Kretschmar, of Brooklyn.

Wednesday—"The Influence of Semi-tropical Latitudes on Types of Diseases," by Dr. John Guitéras, of Charleston; Discussion: "The Relative Importance of Different Climatic Elements in the Treatment of Phthisis" (to be opened by Dr. E. T. Bruen, of Philadelphia, and Dr. V. Y. Bowditch, of Boston);

"Indications and Contra-indications for Altitude in the Treatment of Phthisis," by Dr. F. I. Knight, of Boston; "An Environment Experiment Repeated," by Dr. E. L. Trudeau, of Saranac Lake, N. Y.; "An Epidemic of Cerebro-spinal Meningitis in Central New York," by Dr. W. T. Ford, of Utica; "The Physiology of Respiration at Great Altitudes," by Dr. F. Donaldson, Jr., of Baltimore; "Report of the Committee on Mineral Springs," Dr. C. C. Rice, of New York, chairman (the Therapeutic Value of Mineral Waters in Gastro-hepatic Diseases, by Dr. William Pepper, of Philadelphia; in Urinary and Arthritic Diseases, by Dr. A. H. Smith, of New York; in Malarial Diseases, by Dr. W. C. Van Bibber, of Baltimore); "The Therapy of Ocean Climate," by Dr. A. L. Gihon, U. S. Navy.

Thursday—"Conditions which tend to render the Atmosphere of a Locality Aseptic," by Dr. J. T. Whittaker, of Cincinnati; Discussion: "The Relation of the Nasal and Neurotic Factors in the *Ætiology* of Asthma" (to be opened by Dr. F. H. Bosworth, of New York, and Dr. E. L. Shurly, of Detroit); "Climate and Bright's Disease," by Dr. J. C. Wilson, of Philadelphia; "The Therapeutic Differences of Mountain and Sea Air," by Dr. W. H. Geddings, of Aikin, S. C.; "Climatic Characteristics of Texas," by Dr. Morse K. Taylor, U. S. Army; "Climatic Characteristics of Roan Mountain, East Tennessee," by Dr. C. Y. Kenworthy, of Jacksonville, Fla.; "Weak Hearts as affected by Climate and Temperature," by Dr. J. J. Levick, of Philadelphia; "Temperature and Relative Humidity, and their Relation to Health and Disease," by Dr. J. M. Anders, of Philadelphia; "Interpleural Pathological Products: their Cause, Significance, and Specific Relationship to Pulmonary Phthisis," by Dr. J. R. Leaming, of New York; "The Management of Phthisical Patients undergoing Climatic Treatment," by Dr. I. H. Platt, of Lakewood, N. J.; "A further contribution to the Study of Consumption among the Indians," by Dr. W. Matthews, U. S. Army; "Observations on the Use of Terebene," by Dr. D. M. Cammann, of New York; "Notes of a Summer in Switzerland," by Dr. D. B. St. John Roosa, of New York; "The Climate of Colorado," by Dr. W. A. Jayne, of Georgetown, Col.

The programme of the ASSOCIATION OF AMERICAN PHYSICIANS (meeting in hall No. 1, Grand Army Building) is as follows: Tuesday—Inaugural Address by the President, Dr. William H. Draper, of New York; "The Geographical Distribution of Typhoid Fever in the United States," by Dr. W. W. Johnston, of Washington; "The Management of the Stage of Convalescence in Typhoid Fever," by Dr. James H. Hutchinson, of Philadelphia; "On some Forms of Paralysis after Typhoid Fever," by Dr. George Ross, of Montreal; "Causal Therapeutics in the Infectious Diseases," by Dr. James C. Wilson, of Philadelphia; "Gastric Neurasthenia," by Dr. George M. Garland, of Boston; "Fatty Heart," by Dr. Frederick Forcheimer, of Cincinnati; "The Diagnostic Significance of the Presystolic Murmur," by Dr. Frank Donaldson, of Baltimore; discussion on "The Absolute and Relative Value of Albumin and Casts, and of Renal Inadequacy, in the Diagnosis and Prognosis of Diseases of the Kidney" (reporters, Dr. Robert T. Edes, of Washington, and Dr. Edward G. Janeway, of New York); "The Relation of Albuminuria to Life Assurance," by Dr. James Tyson, of Philadelphia; "The Cardiac Changes in Chronic Bright's Disease," by Dr. Alfred L. Loomis, of New York; "The Relation between Chronic Interstitial Nephritis and Angina Pectoris," by Dr. Samuel C. Chew, of Baltimore; "Disturbances of the Heart-Rhythm, with reference to their Causation and their Value in Diagnosis," by Dr. G. Baumgarten, of St. Louis; "Pulse-wave Velocity and Ventricular Close-time in Health," by Dr. James K. Thacher, of New Haven; "The Treatment of Valvular Affections of the Heart," by Dr. Jacob M. DaCosta, of Philadelphia.

Thursday—Discussion, conjointly with the American Physiological Society, on "The Relation between Trophic Lesions and Diseases of the Nervous System (reporters, Dr. E. C. Seguin, representing the Association of American Physicians, and Dr. H. C. Wood, representing the American Physiological Society); "The Pathology of the Thymus Gland," by Dr. A. Jacobi, of New York; "Is Hystero-epilepsy better treated by Medical or Surgical Means?" by Dr. William M. Polk, of New York; Demonstrations in Pathological Anatomy, by Dr. T. Mitchell Prudden, of New York, Dr. William H. Welch, of Baltimore, Dr. E. O. Shakespeare, of Philadelphia, and Dr. W. T. Councilman of Baltimore; "Recent Researches relating to the *Ætiology* of Yellow Fever," by Dr. George M. Sternberg, U. S. Army; "The Effect of Concussion of the Spine on the Reflexes," by Dr. Francis T. Miles, of Baltimore.

The programme of the AMERICAN OTOLOGICAL SOCIETY (meeting at the Arlington Hotel) is as follows: Tuesday—"The Primary Physiological Purpose of the Membrana Tympani," by Dr. S. O. Richey, of Washington; "Chronic Purulent Inflammation of the Tympanic Attic," by Dr. C. H. Burnett, of Philadelphia; "Nasal Difficulties in Ear Disease," by Dr. J. Oscroft Tansley, of New York; "The Employment of Solutions of Boric Acid in the Treatment of Otitis Media Suppurativa," by Dr. Samuel Theobald, of Baltimore; "A Case of Cerebral Abscess, following Extensive Necrosis of the Temporal Bone—Operation—Death from Secondary Hæmorrhage—Autopsy," by Dr. Gorham Bacon, of New York; "Excision of the Drumhead and Ossicles for the Cure of Chronic Purulent Inflammation of the Attic of the Tympanum," by Dr. Samuel Sexton, of New York; "Exhibition of Improved Cannular Aural Forceps and Scissors," by Dr. W. H. Carmalt of New Haven.

The programme of the AMERICAN OPHTHALMOLOGICAL SOCIETY (meeting at the Arlington Hotel) is as follows: Wednesday—"Some Tenotomies for the Correction of Heterophoria, with Results," by Dr. David Webster, of New York; "The Advantages and Disadvantages of Iridectomy in Simple Chronic Glaucoma compared," by Dr. Charles Stedman Bull, of New York; "Is Astigmatism a Factor in the Causation of Glaucoma?" by Dr. Samuel Theobald, of Baltimore; "The Treatment of Ulcers of the Cornea," by Dr. Peter A. Callan, of New York; "Meridional Astigmatism," by Dr. Edward Jackson, of Philadelphia; Report of a Committee "On the Numbering of Prisms according to their Refractive Power"; "Nasal Difficulties in Eye Diseases" and "A New Instrument for Demonstrating Refractions," by Dr. J. Oscroft Tansley, of New York; "Acute Cocaine Conjunctivitis," by Dr. W. F. Mittendorf, of New York; "The Treatment and Prognosis of Incipient Cataract," by Dr. Samuel D. Risley, of Philadelphia; Exhibition of Apparatus for the Diagnosis of Refraction, by Dr. Swan M. Burnett, of Washington.

The programme of the AMERICAN NEUROLOGICAL ASSOCIATION (meeting at Willard's Hotel) is as follows: Tuesday—"The Relation of Renal Diseases to Diseases of the Nervous System," by Dr. Robert T. Edes, of Washington (to be discussed by Dr. F. X. Dercum, Dr. Leonard Weber, Dr. E. C. Seguin, and Dr. L. C. Gray); "Muscular Dystrophies," by Dr. B. Sachs, of New York (to be discussed by Dr. P. C. Knapp, Dr. G. W. Jacoby, Dr. W. R. Birdsall, and Dr. C. K. Mills); "Post-hemiplegic Disturbances of Motion in Children," by Dr. Philip C. Knapp, of Boston; "Heat Centers in Man," by Dr. Isaac Ott, of Easton, Pa.; "The Relation of the Thalamus to the Paracœle (Lateral Ventricle), with Comments on Other Matters sometimes misunderstood," by Dr. Burt G. Wilder, of Ithaca, N. Y.; "Clinical Report of Cases of Epilepsy following Cerebral Hemiplegia," by Dr. E. D. Fisher, of New York;

"The Relation of Urinary Changes to Functional Nervous Diseases," by Dr. C. L. Dana, of New York; "The Differential Diagnosis between General Paresis, Certain Forms of Intracranial Syphilis, and the Cerebral Type of Disseminated Sclerosis," by Dr. Landon Carter Gray, of New York; "Report of a Case of Primary Lateral Sclerosis with Late Cerebral Symptoms due to a Cyst of the Floor of the Lateral Ventricle, with Microscopic Report," by Dr. Wharton Sinkler, of Philadelphia; "A Case of an Unusual Form of Myxedema, illustrated by Photographs and Sections of Excised Tissues," by Dr. F. X. Dercum, of Philadelphia; "A Case of Alcoholic Multiple Neuritis, with Sections," by Dr. James Hendrie Lloyd, of Philadelphia; "Acute Fatal Neuritis, with a Histological Examination," by Dr. James J. Putnam, of Boston (Dr. C. K. Mills and others will demonstrate specimens); "Myositis Subcutanea Progressiva," by Dr. G. W. Jacoby, of New York; "The Differential Diagnosis between Peripheral Neuritis and those Cerebral Affections with which it is most likely to be confounded," by Dr. E. C. Spitzka, of New York; "Dislocation of Cervical Vertebrae—Two Cases—Spontaneous Recovery," by Dr. G. L. Walton, of Boston; "Nervous Affections following Injury," by Dr. Philip C. Knapp, of Boston; "Hereditary Chorea," by Dr. Wharton Sinkler, of Philadelphia; "Aneurysm of an Anomalous Artery causing Antero-posterior Division of the Optic Chiasm and Bitemporal Hemianopsia," by Dr. S. Weir Mitchell, of Philadelphia (to be read by Dr. F. X. Dercum, of Philadelphia); "A Case of Focal Epilepsy, with Observations on Trephining," by Dr. James Hendrie Lloyd, of Philadelphia; the Preliminary Report of the Committee on Encephalic Nomenclature (to be read by Dr. Burt G. Wilder, Chairman, Ithaca).

The programme of the AMERICAN DERMATOLOGICAL ASSOCIATION (meeting at Willard's Hotel) is as follows: Address, by the President, Dr. I. E. Atkinson, of Baltimore; "The Electrolytic Decomposition of Organic Tissues," by Dr. G. H. Rohé, of Baltimore; "The Value of Salicylic Acid in Dermatology," by Dr. Heitzmann, of New York; "Hereditary Dermatoses," by Dr. J. C. White, of Boston; "A Report of Four Cases of Dermatitis Herpetiformis," by Dr. J. E. Graham, of Toronto, Canada; "Dermatitis Herpetiformis, with Notes of Three Cases," by Dr. H. W. Stelwagon, of Philadelphia; "Personal Observations on Skin Diseases in the Negro," by Dr. R. B. Morison, of Baltimore; "Note of a Case of *Filaria Medinensis*," by Dr. A. Van Harlingen, of Baltimore.

Wednesday—Report of the Committee on Statistics; Report of the Committee on Nomenclature; "So-called Acne Anthracoides Iodo-potassique," by Dr. R. W. Taylor, of New York; "Note Relative to the Vegetative Lesions induced by the Ingestion of Some of the Iodine Compounds," by Dr. J. N. Hyde, of Chicago; "Notes on Some Unusual Cases of Skin Disease," by Dr. W. A. Hardaway, of St. Louis; "A Contribution to the Clinical History of Alopecia Areata," by Dr. A. Van Harlingen, of Philadelphia; "The Non-identity of Lichen Planus and Lichen Ruber," by Dr. G. H. Fox, of New York; "The Question of the Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson)," by Dr. A. R. Robinson, of New York; "Multiple Pigmentary Sarcoma," by Dr. E. B. Bronson, of New York; "Dermatitis Plantaris et Palmaris," by Dr. L. Duncan Bulkley, of New York.

Thursday—"Raynaud's Disease and Symmetrical Gangrene in late Syphilis," by Dr. R. W. Taylor, of New York; "The Relations of Frambæsia to Syphilis and Tuberculosis of the Skin, with Report of a Case," by Dr. P. A. Morrow, of New York; "Kraurosis of the Vulva (Breisky)," by Dr. C. Heitzmann, of New York; "Molluscum Contagiosum, a Clinical Report," by Dr. H. W. Stelwagon, of Philadelphia.

The programme of the AMERICAN PHYSIOLOGICAL SOCIETY (meeting in the Army Medical Museum) is as follows: "On the Therapeutic and Forensic Aspects of Hypnotism," by Dr. G. Stanley Hall, of Worcester, Mass.; "On Enzymes Comparable with Papain, found in certain Fruits of Temperate Climates," by Dr. G. L. Goodale, of Cambridge, Mass.; "On the Knee-jerk Phenomenon," by Dr. G. W. Warren, of Boston; "On the Nature of the Knee-jerk," by Dr. W. P. Lombard, of New York; "Growth and Death," "The Cells of the Cortex Cerebri," and "The Uterus during Gestation," by Dr. C. S. Minot, of Boston; "On the Temperature of the Vitality of the Mammalian Heart," by Dr. H. N. Martin, of Baltimore; "Histological Changes produced in Ganglion Cells by Stimulation," by Dr. H. H. Donaldson, of Baltimore; "On Fever," by Dr. Isaac Ott, of Easton; "On the Distribution of Bacteria in Drinking-waters and Public Buildings," by Dr. W. T. Sedgwick, of Boston; "The Origin and Regeneration of Red Blood-corpuscles," by Dr. W. H. Howell, of Baltimore; "On the Physiological Action of Uranium Salts," "On Elastin and certain of its Decomposition Products," and "The Influence of Acetanilide, or Antifebrine, on Proteid Metabolism," by Dr. R. H. Chittenden, of New Haven; "The Relations of Costal and Diaphragmatic Breathing, with particular reference to Phonation," and "A Plethysmographic Study of the Changes of Volume Produced in the Human Finger and Arm by Various Methods of Electrical Stimulation," by Dr. H. Sewall, of Ann Arbor, Mich.

The programme of the AMERICAN ORTHOPÆDIC ASSOCIATION (meeting at Welcker's Hotel) is as follows: "The Modern Treatment of Chronic Joint and Spinal Disease," by Dr. Newton M. Shaffer, of New York; "Immobilization in Articular Disease" and "A Report on the Treatment of Club-foot by means of the Thomas Wrench, or 'T. T.,'" by Dr. V. P. Gibney, of New York; "The Mechanical Treatment of Senile Coxitis," by Dr. Henry L. Taylor, of New York; "A Practical Point in the Treatment of Pott's Disease of the Spine," by Dr. A. B. Judson, of New York; "An Efficient and Inexpensive Method for the Mechanical Treatment of Pott's Disease," by Dr. C. F. Stillman, of New York; "Rest in the Treatment of Chronic Joint Diseases," by Dr. John Ridlon, of New York; "Acute Epiphysitis in Infants," by Dr. Dillon Brown, of New York; "Remarks on Lateral Curvature and its Early Treatment," by Dr. Samuel Ketch, of New York; "Osteotomy for Anterior Tibial Curves," by Dr. DeForrest Willard, of Philadelphia; "Description of an Apparatus for Measuring any Inequality in the Lengths of the Lower Extremities," by Dr. T. G. Morton, of Philadelphia; "Hæmatoma Oris as a Sign of Injury to the Spine in the Superior Cervical Region," by Dr. Benjamin Lee, of Philadelphia; "Two Knee-joint Excisions," by Dr. A. J. Steele, of St. Louis; "Report on Morton's Operation for the Immediate Reduction of Club-foot," by Dr. H. Hodgen, of St. Louis; "Femoral Osteotomy," by Dr. Ap Morgan Vance, of Louisville; "A Case of Reflex (?) Valgus," by Dr. G. W. Ryan, of Cincinnati; "Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries; with special reference to the Hip, Knee, and Elbow Joints, with Illustrative Cases," by Dr. W. R. Whitehead, of Denver; "An Analysis of the Treatment of Seventy Cases of Club-foot," by Dr. E. H. Bradford, of Boston; "The Treatment of Hip-joint Disease by Fixation and Extension, with the Exhibition of a New Splint," by Dr. R. W. Lovett, of Boston; "The Surgical and Mechanical Treatment of the Deformities of Infantile Spinal and Cerebral Paralysis," by Dr. A. Sidney Roberts, of Philadelphia.

Marine-Hospital Service.—Official List of Changes of Stations and Duties of Medical Officers of the United States

Marine-Hospital Service for the two weeks ending September 10, 1888:

- PURVIANCE, GEORGE, Surgeon. To proceed to Fairport, Ohio, as inspector. August 27, 1888.
- MURRAY, R. D., Surgeon. To proceed to Key West, Fla. September 5, 1888.
- HUTTON, W. H. H., Surgeon. To take temporary command of Camp Perry, Florida. September 8, 1888.
- GUITÉRAS, JOHN, Passed Assistant Surgeon. To proceed to Jacksonville, Fla., after his return from duty on special train from Jacksonville to Hendersonville, N. C. September 8, 1888.
- BRATTON, W. D., Passed Assistant Surgeon. To proceed to San Francisco, Cal., and report to Surgeon H. W. Sawtelle for duty. September 8, 1888.
- WASDIN, EUGENE, Passed Assistant Surgeon. To rejoin his station at Mobile, Ala. September 5, 1888.
- MAGRUDER, G. M., Assistant Surgeon. To proceed to Mobile, Ala., and assume temporary charge of the Service. August 31, 1888.
- FATTIC, J. B., Assistant Surgeon. To proceed to Memphis, Tenn., and relieve Passed Assistant Surgeon C. T., Peckham. August 31, 1888.
- MAGRUDER, G. M., Assistant Surgeon. To proceed to Way Cross, Ga. September 6, 1888.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 26 to September 8, 1888:*

- ALDEN, CHARLES H., Major and Surgeon. Detailed as a member of the Board of Medical Officers convened at U. S. Military Academy, West Point, N. Y., vice Major Charles R. Greenleaf, Surgeon, relieved. Par. 2, S. O. 199, A. G. O., August 28, 1888.
- CALDWELL, DANIEL G., Major and Surgeon. To report to the Recorder of the Retiring Board in session at Fort Leavenworth, Kan., as a witness in the case of Captain Thomas Sharp, Seventeenth Infantry. Par. 2, S. O. 74, Department of the Platte, August 18, 1888.
- CALDWELL, DANIEL G., Major and Surgeon. Having completed his duty as witness before Retiring Board, Fort Leavenworth, Kan., to return to his station, Fort D. A. Russell, Wyoming Territory. Par. 4, S. O. 106, Department of the Missouri, August 24, 1888.
- LOBING, LEONARD Y., Assistant Surgeon. Granted leave of absence for one month. Par. 1, S. O. 97, Department of Arizona, August 23, 1888.
- TAYLOR, MARCUS E., Captain and Assistant Surgeon. Granted leave of absence for four months, to take effect about October 15, 1888. Par. 8, S. O. 196, A. G. O., August 24, 1888.
- BIRMINGHAM, HENRY P., Captain and Assistant Surgeon. Relieved from duty at Fort Myer, Va., and ordered to Fort Klamath, Oregon, for duty. Par. 18, S. O. 196, A. G. O., August 24, 1888.
- BALL, R. R., Assistant Surgeon, Fort Riley, Kan., ordered to Fort Lewis, Colorado, for temporary duty. Par. 5, S. O. 108, Department of the Missouri, August 27, 1888.
- SWIFT, EUGENE L., Assistant Surgeon. Upon being relieved from temporary duty at Fort Klamath, Oregon, to return to his proper station, Fort Spokane, W. T. Par. 18, S. O. 196, A. G. O., August 24, 1888.
- RAFFERTY, OGDEN, Assistant Surgeon. To proceed from Fort Clark to the camp at the Department Rifle Range near San Antonio, Tex., and report for temporary duty. Par. 3, S. O. 85, Department of Texas, August 15, 1888.

RAFFERTY, OGDEN, Assistant Surgeon. Upon conclusion of department rifle competition to report to the Inspector of Rifle Practice, Division of the Missouri, for assignment to duty in connection with the division rifle competition as Camp Surgeon. Par. 4, S. O. 86, Department of Texas, August 17, 1888.

WORTHINGTON, J. C., Captain and Assistant Surgeon. Ordered from Fort Crawford, Col., to Fort Townsend, Washington Territory. S. O. 206, A. G. O., September 5, 1888.

HALL, J. D., Captain and Assistant Surgeon. Ordered from Fort Townsend, Washington Territory, to Fort Niagara, N. Y. S. O. 206, A. G. O., September 5, 1888.

Society Meetings for the Coming Week:

MONDAY, *September 17th*: New York Academy of Medicine (Section in Ophthalmology and Otology); Medico-surgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *September 18th*: Congress of American Physicians and Surgeons (first day—Washington); New York Academy of Medicine (Section in Theory and Practice of Medicine); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburg, N. Y., Medical Association; Baltimore, Md., Academy of Medicine; Connecticut River Valley Medical Association (Bellows Falls, Vt.).

WEDNESDAY, *September 19th*: Congress of American Physicians and Surgeons (second day); Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; Medical Society of the County of Alleghany (quarterly), N. Y.; New Jersey Academy of Medicine (Newark).

THURSDAY, *September 20th*: Congress of American Physicians and Surgeons (third day); New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *September 21st*: Chicago Gynecological Society; Baltimore, Md., Clinical Society.

Reports on the Progress of Medicine.

DISEASES OF CHILDREN.

By ANDREW F. CURRIER, M. D.

Diphtheria.—Cousot ("El Progreso Gin. y Ped.," June 25, 1888) discusses anew the question whether diphtheria is primarily a general disease with local manifestations, or whether the diphtheritic membrane is the first factor in a general intoxication. The author believes that the great point is to combat the local manifestations from the beginning, and that they constitute the origin of all subsequent accidents. He believes that the following principles should dominate all rational treatment of this disease:

1. The medical treatment of diphtheria should be principally local at the beginning of the disease.
2. The organized germs of the products of diphtheria should be destroyed or sterilized wherever they occur.
3. Putrefaction of the elements of the diphtheritic membrane should be prevented at all hazards.
4. If the disease has reached an advanced period and general poisoning has supervened, local treatment should still be rigorously continued, in addition to the adoption of suitable means for controlling the general symptoms. The best means for the treatment of diphtheritic products with which the author is acquainted is a preparation of tannin, alcohol, and mucilage applied with a syringe. Tannin is a safe antiseptic which may be extensively used without fear of injury to delicate tissues. The mixture which the author uses contains:

Mucilage.....	100 parts ;
Tannin.....	10 "
Alcohol.....	2 to 20 "

If the false membrane is discovered when there is only a single patch upon the skin or the mucous membrane external to the air-passages, applications of the tannin may prevent its spread. If the pharynx, tonsils, or nasal fossæ are involved, the mixture should be injected by the mouth or nose every two hours. Evidences of putrefaction will disappear after the first few injections, the membranes will shrivel, and the underlying mucous surface will assume a healthy red appearance.

Menthol in Diphtheria of the Nose.—Cholewa ("Rev. mens. des mal. de l'enfance," August, 1888) opens with the following case :

In a child eight years of age, suffering with diphtheria, the pillars of the velum of the palate, the tonsils, and the uvula were covered with thick false membrane. From the orifices of the nose there flowed a transparent fluid along the naso-labial furrow which irritated the nasal mucous membrane and the upper lip. Examination of the nasal mucous membrane showed that the pituitary membrane was swollen and extensively covered with a grayish deposit. The patient complained of lancinating pains in the ears, and the tympanum was red, inflammatory swelling of the mucous membrane of the middle ear evidently existing. The nose was irrigated with lime-water, and frequent gargling with the same solution was advised. The result was not satisfactory, and in twenty-four hours the mucous membrane was so swollen that respiration by the nose was impossible. Thick false membranes now covered the pituitary mucous membrane, and in a short time the entire nasopharyngeal space was covered by them. At this time it occurred to the author to make applications with a twenty-per-cent. solution of menthol in the nasal cavities. Within a few hours after these applications were begun, the swelling of the nasal mucous membrane lost its gravity and the child could breathe freely by the nose. Identical results were also obtained by similar treatment in the case of the four-year-old sister of the preceding patient, who also suffered with diphtheria. The false membranes in this case rapidly disappeared not only from the nasal cavities but also from the pharynx.

Mercurial Fumigations in Laryngeal Diphtheria, or Diphtheritic Croup.—Corbin (*ibid.*) remarks that the extension of diphtheritic membranes from the pharynx to the larynx is one of the most serious complications of diphtheria, and usually leads to a fatal result from asphyxia. Tracheotomy, except in rare instances, must be considered a method by which a relatively easy death is obtained. The results obtained from intubation, as regards the number of recoveries, have been little, if any, better than those obtained by tracheotomy. The author began the treatment of diphtheria by mercurial fumigation in 1874 in a distressing case in which a fatal issue seemed probable. A tent was arranged in the bed-chamber in which the child was placed and in which a drachm of the black oxide of mercury was volatilized by the heat from an alcohol-lamp every two hours, the child being kept in the tent twenty minutes. The child recovered, and on the third day expectorated a portion of false membrane four inches long. Other cases were seen by the author in which mercurial fumigation was equally successful. In no case did salivation or diarrhoea follow this treatment.

The Treatment of Whooping-cough.—Widowitz (*ibid.*) says that, according to the investigations of Letzerich, Thchamer, and Afanassjen, whooping-cough is produced by a fungus which has its seat upon the mucous membrane of the respiratory passages. This fungus proliferates without entering the current of the circulation. In this respect whooping-cough shows decided analogies with muguet. In the second and third stages of the disease, when the cough is very violent and the mucus from the tracheo-bronchial mucous membrane upon which the proliferation of the fungi has taken place is violently expelled, the conditions are favorable for its self-limitation or spontaneous cure. The aim of treatment should be, therefore, to encourage the active secretion of mucus in the bronchial tubes, that it may be expelled in the course of the paroxysms of coughing. With this theory in view, the author has been in the habit of administering oxymel of squills according to the formula of Netter. Between 5 and 6 o'clock each afternoon a coffee-spoonful of this medicament was prescribed, to be repeated every ten minutes, the quantity being somewhat smaller for very young pa-

tients. In most cases this medication caused violent attacks of cough followed by vomiting, the latter ceasing within two days, after which the expectoration of thick mucus was abundant. Under this treatment the paroxysms of coughing diminished within twenty-four hours in one case from twenty-four to six in number; in another from ten to two; in a third from twenty-three to three; and in a fourth from twenty-four to nothing. Thus it appears that this preparation of squills exercises an influence upon the frequency and intensity of the paroxysms of coughing, but not upon the duration of the disease.

Fumigations, Vaporizations, Inhalations, etc., in the Treatment of Pulmonary Diseases in Children.—Pierron ("Jour. de méd.," June 3, 1888) says that the external therapeutic agents which by means of their volatile properties are absorbable, whether by fumigation, inhalation, pulverization, or irrigation, should be generally understood, for they are useful in both acute and chronic diseases of the lungs. If a medicament which should be taken by a child in a given disease is very repugnant to him when taken by the mouth, it should be given in some way which will render it less repugnant, and there seems to be no better way than to mix it with air and inhale it. The value of eucalyptus in bronchitis is increased because of the fact that it may be so readily taken by inhalation. The following is recommended as an excellent mixture for fumigation, being placed over an alcohol-lamp or a slow fire :

℞ Tr. of oil of eucalyptus, {	
Fir-tree buds, {	 āā 1½ oz. ;
Ess. of terebinth. rectific.....	10 dr. ;
Aquæ.....	31 oz.

Water should be added as evaporation progresses, and every two hours a teaspoonful of essence of turpentine, until the atmosphere is saturated. The quantity of the ingredients may be varied according to circumstances, and the entire mixture should be renewed every two or three days. Another formula for fumigation is :

℞ Resin of fir-wood.....	6½ oz. ;
Potass. carb.....	2½ dr. ;
Water.....	31 oz.

This should be allowed to evaporate over a slow fire, the resin and the water being frequently renewed.

Another excellent means of treatment is to take one hundred grammes of juniper berries, pour over them a thousand grammes of boiling water, and place the vessel near or on the bed of the child so that the vapor may be freely inhaled. In the same way evaporating mixtures may be made from poppies, chamomile flowers, and aromatic essences. Other vapors may be obtained by the combustion of sulphur, potash salts, benzoin, myrrh, amber, etc. Sulphur is rarely used in acute diseases, but in chronic ones it is often efficient in the form of inhalations or pulverizations. Sublimed sulphur is the best for such purposes, one gramme being burned for each twenty-five cubic meters of air. The combustion of chlorate of potash on a hot pan will liberate a quantity of oxygen which will be very efficient when the supply of oxygen is too limited. Dry fumigation with balsams and aromatics may be obtained by the combustion of suitably prepared troches. The following formula is suggested for such purpose :

℞ Benzoate of myrrh.....	45 gr. ;
Pulverized poplar.....	2 oz. ;
Nitrate of potash.....	5 dr. ;
Gum tragacanth.....	45 gr. ;
Water.....	48 gr.

The foregoing is to be made into sixteen troches.

Useful results may also be obtained by fumigation with leaves of belladonna, stramonium, etc., after having moistened them with a ten-per-cent. solution of nitrate of potash, and then allowing them to dry. The vapor from camphor is no longer esteemed as it used to be. Iodine evaporates at ordinary temperatures, and one may inhale a sufficient quantity by pouring a few drops of the tincture upon a cloth and holding it before the mouth for a few minutes. Such gases as sulphureted hydrogen, chlorine, and nitrogen should not be used in the lung diseases of children.

Atomization or pulverization with suitable spraying apparatus is also a serviceable means of treatment. The following formulæ are suggested for that purpose :

℞ Acidi carbol.....	36 gr. ;
Alcohol.....	4 dr. ;
Aquæ calidæ.....	8 oz.
℞ Camph. pulv.....	36 gr. ;
Alcohol.....	10 dr. ;
Creasoti.....	1½ dr. ;
Aquæ.....	9 oz.
℞ Acidi salicyl.....	36 gr. ;
Thymol.....	36 gr. ;
Alcohol.....	2½ dr. ;
Aquæ calidæ.....	16 oz.
℞ Eucalyptol.....	1 dr. ;
Alcohol.....	2½ dr. ;
Aquæ calidæ.....	13 oz.

Instead of the foregoing, other volatile essences or oleo-resins may be used with the atomizer. The atomization should not be made directly into the child's throat, but the air in the immediate vicinity of the couch should frequently be charged with the medicated vapors.

Pleurisy in Very Young Children.—Sevestre ("Rev. mens. des mal. de l'enfance," July, 1888) concludes from his investigations and reflections as follows:

1. Pleurisy in children is very easily recognized if one is sufficiently cautious in examinations; on the other hand, it is very difficult to estimate with precision the quantity of fluid which has been effused. For this particular portion of the diagnosis, indeed for establishing the very existence of pleurisy, percussion is more useful than auscultation.

2. The determination that the fluid effused in pleurisy is purulent is difficult; the gradual emaciation of the child and the cachectic condition give rise to a suspicion that such is the case. Exploratory puncture, which is not a dangerous procedure, will remove all doubt in the matter.

3. Should the child diminish in weight while the effusion still appears to be serous, one should not hesitate to evacuate the effusion by puncture. If the pleurisy be purulent, still more is puncture indicated, and if the general condition continues bad, one should not delay in considering it an empyema, and treat it by antiseptic irrigation.

The Causes which may Retard or Prevent Walking in Children.—Grancher (*ibid.*) remarks that the questions, At what age should a child walk? and What are the causes which may retard or prevent walking in a child? are interesting and delicate. There is an anatomical explanation for the fact that a child acquires the power of walking only by degrees, and at a period sufficiently remote from birth—namely, that the portion of the nerve axis which presides over locomotion is only imperfectly developed at birth. This portion is called the *pyramidal fasciculus*, and forms a long commissure between the cortical motor cells and the cells of the anterior horns of the spinal cord. Its development is not completed until a considerable period from birth has elapsed, as has been shown by the investigations of Flechsig and Parrot. The former considers that it is derived from a kind of bud of gray matter, which is gradually developed from above downward, while the latter thinks that there are two centers of formation, the first and earlier constituted by the central nuclei, the second or later by the cortical motor zone. The important point in this matter is that the pyramidal fasciculus starts from the cerebrum, and that at the moment of birth there is only a rudimentary condition in the bulb and in the cord. In order that locomotion may be exercised, the pyramidal fasciculus must be completely developed, and there must also be integrity of the motor cortical zone, the cerebral ganglions, the cord, the nerves, muscles, bony levers, and articulations. An analysis of 168 hospital cases, of which 100 were girls and 68 boys, shows that the greatest number of the former began to walk between the tenth and the sixteenth months, the most precocious beginning at the eighth month and the most backward at the end of the second year. The greatest number of boys walked between the twelfth and the sixteenth months, the extreme limits being nine months and two years. Any child who is unable to walk by the end of the second year will usually be found to be the subject of a pathological condition.

A series of physiological tracings were made of the impressions made by the feet of young children in walking; from these the rule was deduced that in children the width of the step remains about the

same whatever the age of the subject; the length increases in direct ratio with the age. The impression obtained from the right and left feet of an infant in walking resembles, more or less, a parallelogram, the width of the step—that is, the distance of the two impressions from the center of gravity—being especially noticeable, while in a child ten or twelve years of age it is the length of the step which is noticeable. The diseases which render a child unable to walk, or retard or otherwise interfere with that function, are cerebral atrophy, cerebral sclerosis, hydrocephalus, meningitis, spasmodic hemiplegia, cerebral or cerebellar tumors, amyotrophic lateral sclerosis, hereditary ataxia, infantile paralysis, chorea, and sometimes hysteria. All the foregoing diseases are associated with the nervous system. In the diseases of the muscles there are also two which have a decided influence in interfering with the function of walking—pseudo-hypertrophic paralysis, and a form of myopathy which begins in the lower limbs. Lesions of the bones and joints have also an important bearing in this direction—namely, fractures, congenital or traumatic luxations, arthropathies, club-feet, Pott's disease, and rickets.

Treatment of Imperforate Anus; Retro-pharyngeal Abscess in an Infant Two Months Old; Opening made on the Right Side of the Neck; Recovery.—St. Germain (*ibid.*) offers a few practical reflections concerning imperforate anus, also the description of a simple method of treatment which has been found very effective. Patients who are presented for hospital treatment with imperforate anus usually show two distinct varieties of condition. In one variety there is only a point, a brown or white spot, which represents the location which should be occupied by the anus, but there is no trace of even the rudiment of a canal. In the other variety, which includes the greater number of cases, the anus is present, but ends at a certain depth. The outward conformation appears normal enough, but when a sound is introduced it is quickly arrested. Often there are ulcerations or scars which indicate that unsuccessful attempts have been made to relieve the obstruction.

In the first variety of the deformity the surgical procedure is a simple one, and, with few exceptions, it will result in a cure. A stroke or two of a bistoury or trocar will be all that is necessary to open the rectal ampulla and evacuate the contained meconium, and then a few points of suture can be taken at the edges of the wound to prevent its closure. There are cases, however, in which the external point appears, but in which there is a communication of the rectum with the bladder, the meconium passing away through the urethra. In such cases the author will not operate, believing that such a course is preferable to making an artificial anus, according to the method of Littré or Amussat. He believes that death is preferable to the misery which is a necessary consequence of an artificial anus.

In that variety of deformity in which the anus is imperforate, and in which there is a rudiment of a rectum at a greater or less depth, the following course is adopted: The patient being in the lithotomy position, an incision is made through the posterior anal commissure toward the coccyx, and the tissues are dissected layer by layer, care being taken to find the rectal ampulla, if one exists. This being found, it is opened, and its edges are secured to the external wound. It may even be necessary to remove a portion of the coccyx in doing this operation. The hæmorrhage may be severe, especially from large veins, and it should be carefully guarded against. A modification of this operation consists in entering a curved needle two centimetres to the left of the rudimentary rectum, passing it to a depth of four centimetres, then carrying it horizontally and outward again. It is armed with a silver wire, and the latter is drawn through the opening made by the needle. With this wire for a guide, the tissues which it includes can be carefully divided, and the rectal ampulla be more readily found than without it. It also diminishes the dangers from hæmorrhage.

In the author's case of retro-pharyngeal abscess the child had been perfectly well until it was five weeks old, when it began to have difficulty in nursing and in swallowing, its cry became deeper and less clear, its skin became hot, and it would have paroxysms of fever. Only a slight redness and swelling were discovered at the level of the right tonsil, and pharyngeal touch did not at first suggest a retro-pharyngeal abscess. At the same time a diffuse tumor began to develop at the level of the anterior border of the right sterno-mas-

toid muscle. Fluctuation in this tumor was absent; resolvent ointments and cataplasms were used with little benefit; the voice became more and more hoarse, the fever more intense, and dysphagia more annoying. In this condition the patient was seen by the author, and the diagnosis of retro-pharyngeal abscess was made. As the abscess was large and had developed outwardly, an external incision was made, and the pus was thoroughly evacuated. A drainage-tube was introduced, carbolic-acid dressings were applied, and the child soon recovered.

Herpes Zoster during Childhood.—Mettenheimer (*ibid.*) reports four cases—three in boys and one in a girl—the ages being five, eight, ten, and sixteen years. In two the herpes was on the right and in two on the left half of the body. The most characteristic vesicles were surrounded with a red areola; they were pearl-colored and had clear contents. They were somewhat elongated instead of rounded, their long axis corresponding with the long axis of the contiguous extremity, the inguinal fold, or with the course of the nerve bundles of the affected region. In a little girl eight years of age who was attacked simultaneously, with a phlyctenoid inflammation of the eyes, with otorrhœa, and with swelling of the cervical glands, the vesicles were disseminated in small groups, one inch wide and two inches long, over a uniformly red base. The vesicles were so small that they were barely distinguishable with the naked eye. The exanthem caused a very lively smarting, but after it disappeared there was no neuralgic pain. In a boy five years of age the exanthem began on the right side on a level with the top of the vertebral column, and extended as far as the umbilicus. On the back the vesicles had the characteristic appearance of herpes, but in front, along the abdominal walls, they were transformed into pustules filled with thick pus, and were arranged in groups. There were no fever and no gastric symptoms, and the herpetic eruption was not accompanied by any pain.

Sometimes the herpetic vesicles resembled pemphigus in their volume and form. Such was the case with a boy ten years of age who showed groups of vesicles on the left side, surrounding the seventh and eighth intercostal spaces. There were also gastric troubles in this case. In the fourth case, a cachectic boy sixteen years of age with weak constitution, the vesicles were upon the face. The eruption started from the left ear and extended in small groups along the course of the facial nerve, and the left cheek, as far as the angle of the mouth.

The diagnosis of abortive forms of herpes zoster presents considerable difficulty in children. When there is only a single group of herpetic vesicles it can be regarded as truly herpetic only when it is accompanied by pains and its direction corresponds to that of the neighboring nerve trunks. While many authors affirm that herpes zoster is very rare in children, it is possible that this rarity is more apparent than real, for it is believed that many cases are overlooked in children because the eruption is not usually accompanied by pain, contrary to the experience which attends the same condition in adults.

Treatment of Infantile Paralysis.—Murrel ("El Progreso Ginecol. y. Pediat.," March 10, 1888) remarks that during the febrile period of infantile paralysis the temperature is elevated three or four degrees, and at this time the child should be kept in a darkened room and as quiet as possible in his bed. The bowels should be kept freely open by means of suitable purgative waters. The food should be as light as possible, and should consist principally of milk and peptones. Tincture of aconite is to be preferred as an antipyretic, the dose varying with the age of the child. Convulsions are not infrequent during this period, and should be treated with large doses of bromides, either by the mouth or the rectum. After the acute period has passed the child may be taken out of bed and should receive an abundance of nourishment. Revulsives should be applied to the nape of the neck, either in the form of blisters or tincture of iodine. A pill containing one sixteenth of a grain of the extract of calabar bean should now be given three times daily, and the number should gradually be increased to eight pills daily. The effect of this medicament is to increase the muscular excitability to such an extent that even slight stimulus will cause muscular contraction. The use of the calabar bean should be continued for several months, but after the sixth week it should be combined with one sixty-fourth of a grain of phosphorus at a dose. After the acute period has terminated, treatment by massage is also indicated. This should be kept up from six weeks to six months, with,

perhaps, short periods of interruption. The séances should be of brief duration. Applications of the continuous galvanic current should be made from time to time until the tone of the muscles has improved, and then the induced current should be used. If cerebral symptoms predominate, a weak current should be passed through the head, a large moist sponge being used as an electrode. In addition to the foregoing, cod-liver oil, malt, the hypophosphites, and beef extracts should be given. The child should always be kept warm. It would be well to envelop him in flannel from head to foot, and at night bottles of hot water should be placed by the side of the paralyzed limbs. Frequent baths should also be given, and they may be salt water, resinous, or electrical, or all three varieties may be used.

Coryza in Very Young Children.—Le Gendre ("Le concours méd.," July 14, 1888) remarks that the dyspnœa and its accompanying symptoms which often attend severe attacks of coryza in young children, especially in nursing infants, is not infrequently regarded by the laity as due to croup. It may even be mistaken for croup by the physician; and Henoch reports cases in which the differential diagnosis was very difficult. Purulent or blennorrhagic coryza may appear a few hours after birth, being a condition kindred with blennorrhagic ophthalmia, and, like the latter, due to infection from the mother during parturition. In some cases of infection, the nasal discharge may be watery or mucous for some time instead of purulent. Non-infectious nasal catarrh may also occur in infants as the result of a too free use of iodine, which may have been administered in the form of the iodide of potassium. The possibility that a coryza may be of syphilitic origin must ever be borne in mind, for the destructive effect of the disease upon the nasal bones and the contour of the organ will soon be manifested, if suitable treatment be not promptly instituted. In the treatment of simple coryza, one at once recalls the effectiveness of local applications of cocaine in the adult for a similar condition. Inasmuch as a strong solution is requisite to be of any benefit, it should either not be used at all, or with great caution, for the absorption of even a small quantity might be followed by dangerous results. The author has had good success in treatment by irrigation, a small sound being passed into one nostril, and a stream of water siphoned into it and out by the other nostril; thus the mucus is thoroughly cleared out, and the child is enabled either to breathe or to nurse with the customary facility. It is admitted, however, that this method would involve considerable risk in new-born infants. The simple use of pieces of small rubber tubes or sounds is recommended by Bouchut, Philipoteaux, Barthez, and Sanné. Henoch recommends the internal use of a seventh to a fourth of a grain of calomel every two hours, even if the coryza be not of syphilitic origin. The author has had good results by insufflating into the nasal fossæ a powder containing pulverized boric acid, resorcin, and powdered sugar, each one part. The general health of infants with coryza must also be carefully guarded. They must not be taken out of doors too soon, and when the weather is damp they must always be kept in the house.

Litholapaxy in Children.—Suender ("Annales de Obstet., Gynecol. y. Pediat.," June, 1888) has collected the following data from the statistics of Keegan, Caldecott, and Gunputsingh, all of them military surgeons in the India service: These gentlemen have collectively operated upon fifty-eight children, between the ages of one year and eight months and fourteen years, for stone, by Bigelow's method, and all but one of the cases was successful. The time occupied by the operations varied between four minutes and three hours, the greater number of them requiring forty minutes to one hour. The caliber of the lithotrites used was 7 or 8 of the English scale, the larger size being used in a small number of cases. The sounds used were of the same size, or, in some cases, a little larger than the lithotrites. In three of the operations the lithotrite was introduced only once, in the greater number of cases it was introduced four to six times, and in one case twenty introductions were necessary. All of the cases, excepting the unsuccessful one, were operated upon at one sitting. The greater number of the calculi were of the uric-acid variety; the detritus weighed from three grains to an ounce and a quarter. It is believed that the only contra-indications to litholapaxy in children consist in great size or hardness of the stone; or very small dimensions of the urethra—that is, too small to admit the sounds and lithotrites. It is recommended that

no dentated lithotrites be used, that operations be completed at one sitting, and that this operation be preferred to the cutting operations for stone.

Late Congenital Syphilis.—Rabl ("Arch. f. Kinderh.," ix, 4 and 5) believes that late congenital syphilis is of much more frequent occurrence than has usually been supposed. The disease is to be diagnosed not only by the presence of parenchymatous keratitis, but also by various glandular swellings, especially those of the neck, by periostitis, by abscesses of the upper external region of the orbital margin, by ozæna even if it occurs only in the form of chronic catarrh, by symmetrical inflammations of the tibia, ulna, and other bones, and by all cases of scrofula in children of vigorous parents in whom there is neither the taint of hereditary tuberculosis nor any of the other usual causes of scrofula. In any of these cases there must be at least a suspicion that the lesion is that of late congenital syphilis, especially when the phenomena appear after the end of the second year—that is, after dentition is completed.

From a study of 112 cases, 50 of which were in boys and 68 in girls, it is clear that there is in general a mistaken idea as to the time when the first symptoms of this disease appear—that is, that in the majority of cases they do not appear at the time of puberty, but before that time. There is a decided difference as to the time of appearing in the two sexes, in boys the symptoms appearing in 68 per cent. of cases before the thirteenth year and about the tenth; in girls they appear in 50 per cent. of the cases about the twelfth year, and during the fourth year they are also of frequent occurrence. At the twenty-first year—that is, about the time of the first pregnancy—they are also of frequent occurrence. There is considerable variety with respect to the lesions manifested, the phenomena varying with the age and also with the sex of the patients. The least significant are those of the eyes, which are sometimes the seat of parenchymatous keratitis; the most significant are those of the nose and pharynx, which in boys appear most frequently at the ages of ten, sixteen, and seventeen years. In girls the lesions of the nose and pharynx occur nearly twice as frequently as in boys and are usually observed at the ages of fourteen and fifteen.

The various lesions as they were observed in the investigations are tabulated by the author as follows:

	Males.	Females.
Lesions of bone.....	32	33
Lesions of eyes.....	21	18
Lesions of nose and pharynx.....	19	23
Gummata and tumors.....	4	10
Glandular lesions.....	3	5
Visceral syphilis.....	3	5
Deafness.....	2	3
Lesions of skin.....	..	2

In 50 per cent. of the cases there was only one form of lesion, while in the others two or three forms either appeared simultaneously or one after the other.

The Influence of Nutriment upon the Supply and the Nutritive Character of Woman's Milk.—Zaleski ("Ctrbl. f. Gyn.," May 26, 1888) found, by analysis of a portion of milk taken from a wet-nurse, that it contained six per cent. of fat, or double the usual quantity. Further investigations showed that the child who was suckled by this nurse was very poorly nourished; diarrhœa and loss of weight supervened; and it was found that the milk which was given was scarcely digestible. It was believed that all these disturbances were due to too great concentration of the milk, the nurse being fattened by a too free use of beer and too little exercise. A change of diet, moderate use of meat, dilution of the beer with water, and abundant exercise in the open air, led to a diminution in the quantity of fat in the milk and an increase in milk-sugar. From that time on the child also began to improve, and thrived well subsequently. The conclusions which were drawn from this case and from experiments upon cows and other animals were: 1. A woman's milk which is very rich in fat may have a very harmful effect upon the nutrition of the child. 2. A diet which is composed almost exclusively of albuminous elements will increase to a perceptible degree the fat in woman's milk, diminish the quantity of milk-

sugar, and has a bad effect in other ways; a similar result may follow the use of alcoholic liquors. 3. By proper diet and nutriment, a desired condition of the milk which is indispensable for the proper nutrition of a child can be obtained, within certain limits. 4. The influence of the general condition upon the milk supply is the same in human beings as in animals. 5. The fat in milk is probably obtained, to a considerable extent, either directly or indirectly, from albuminous foods.

Ectocardia and its Cure by Autoplasty.—Lannelongue ("Rev. mens. des mal. de l'enfance," July, 1888) says that the idea that children born at term with ectocardia, though normally constituted in other respects, may receive such treatment as will result in their cure has recently been strengthened by the experience of the author. The patient when six days old was brought to the Hospital Trousseau. It was rather delicate in appearance, but nursed and performed other functions normally. In the thoracic region near the middle of the sternum there was a round ulceration about as large as a twenty-five-cent piece. This ulceration was incompletely closed on the side of the thoracic cavity by a soft, yellowish membrane, which was partly detached and subsequently came away altogether. Beneath this membrane lay the heart, the apex of the ventricles beating toward the aperture in the chest-wall. There was also an incomplete median fissure of the sternum, the xiphoid appendix being normal. After the membrane referred to came away, a granulation process began in the circle of tissue bounding the thoracic opening and along the lateral borders of the ventricles. As the work of reparation would eventually interfere with the action of the ventricles, a surgical operation was determined upon, the following physiological observations being first made: 1. The heart being bare, it was possible to demonstrate that when the finger was directly applied to the ventricle it was thrust back at the moment that the organ diminished in size and became hardened. 2. The impulse was perceived over the entire extent of the ventricles and not at the apex alone.

The pathogenetic condition of ectocardia is due to intrinsic or extrinsic adhesions. Intrinsic adhesions, or abnormal connections between the heart and the neighboring organs or tissues of the embryo, usually result in ectopia with preservation of the integument; extrinsic adhesions or connections between the heart and the appendages (annexes) of the embryo usually result in ectocardia. The patient was fifteen days old when the operation was performed. It seemed probable that, if the cutaneous orifice were closed with freshened strips of tissue, the movements of the heart would prevent too close attachment to it, and that a serous cavity would form which would respond to the needs of the cardiac function. Two vertical incisions were made on each side of the opening, about 15 millimetres from the ulcerated edge. The two flaps thus formed were then sufficiently moved so that their internal borders could be united and sutured over the seat of the heart. Only a few drops of blood were lost during the operation, and there was no perceptible after-effect upon the infant's general condition. In less than twenty days cicatrization had been accomplished. Two months later the child was in good health, and over the region of the heart there was a linear scar which was barely perceptible. The chest was normally closed by the external integument. Two vertical scars marked the site of the tissue which had been transplanted. The beatings of the heart, and even the form of the organ at each systole, were plainly visible, but the tegumentary covering of the organ furnished a good protection, and was not adherent to it. The effect of the operation was to convert a case of ectocardia into one of subcutaneous ectopia. As the heart develops in this case, it is possible that it may eventually take an intrathoracic position, the sternal fissure may be more or less obliterated, and the contractions of the organ may no longer be visible externally.

Syphilis and its Treatment.—Widerhofer (*ibid.*) remarks that of children who are born with congenital syphilis, especially if they are born prematurely, 99 per cent. die if they are not nourished at the breast. The danger of infection from those who are born with syphilis is far less than from those who have acquired it, and for this reason the author does not hesitate to place such children with a wet-nurse, if the nurse is informed beforehand of the degree of danger to which she is exposed. In the way of medication, he prefers the use of three fourths of a grain of calomel and one sixth to one third of a grain of the sac-

charated carbonate of iron two or three times daily. Treatment by inunction should never be practiced with children under one year of age, and very infrequently and circumspectly with those who are more than one year old. Good results have been obtained by the author with subcutaneous injections, Bamberger's sublimate peptone being used, in doses of one sixth of a grain. This should not be continued if it produces nodules in the skin, and one must be very particular that the preparation is a fresh one. Sublimate baths are also recommended, and have been found very efficient, fifteen grains of sublimate being used to three hundred litres of water. External lesions may be treated by applications of sublimate, or the condylomata may be sprinkled with calomel, and then washed off with chlorine water. In affections of the nose, which should be watched with great care on account of possible complications in suckling, local applications may be made with a one-per-cent. ointment of yellow precipitate. A child with hereditary syphilis should be kept under observation for at least a year, and should be seen every fourteen days. Afterward the treatment should be resumed should there be the slightest evidence of its reappearance.

The So-called Essential Oedema.—Wagner (*ibid.*) designates by the term *essential oedema* those rare cases in which it is impossible, by either clinical or pathologico-anatomical investigations, to find out the cause. This oedema, whether primary or idiopathic, is more frequently observed in children than in adults. Most frequently, also, it occupies the entire surface of the body. The study of the cases which the author has reported has given him little light in regard to the ætiology of the disease. In most of the cases it is apparent that there are many causes for the morbid phenomena, among the most frequent of which are changes in the blood, cardiac asthenia, vascular modifications, and probably cutaneous changes. In several cases which occurred among children, heredity seemed to play an important part in the genesis of the disease, in some cases a father having been rhachitic, in others one of the parents, or a brother or sister being the subject of general oedema. Neither autopsies nor experiments upon animals have served to explain to the author the genesis of the disease. It is doubtful whether the vaso-motor or trophic nerves have any part whatever in the process. We are equally in the dark in regard to the generalized oedema which sometimes accompanies the febrile affections, though it is possible that the elastic tissue, the pathologico-anatomical modifications of which are very little known, may have something to do with the production of the phenomenon.

Miscellany.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending September 7th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 18th corresponded to an annual rate of 16.4 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bolton and Nottingham, viz., 12.9, and the highest in Manchester, viz., 22.8 in a thousand. Small-pox caused 1 death in Oldham. Diphtheria caused 3 deaths in Manchester and 2 in Salford.

London.—One thousand three hundred and thirty deaths were registered during the week, including measles, 33; scarlet fever, 17; diphtheria, 13; whooping-cough, 20; typhus, 2; enteric fever, 2; diarrhoea and dysentery, 162; simple cholera and choleraic diarrhoea, 4. Diseases of the respiratory organs caused 167 deaths; different forms of violence, 47; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.2 in a thousand. In greater London 1,649 deaths were registered, corresponding to an annual rate of 15.6 in a thousand of the population. In the "outer ring" the deaths included diarrhoea, 31; diphtheria, 5; whooping-cough, 8; and measles, 7.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending August 18th in the sixteen principal town districts of Ireland was 17 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4.8, and the highest in Waterford, viz., 25.5 in a thousand. In Dublin 123 deaths were registered, including whooping-cough, 3; enteric fever, 2; scarlet fever, 1; diarrhoea, 5; typhus, 1; and diphtheria, 1.

Scotland.—The deaths registered in eight principal towns during the week ending August 18th corresponded to an annual rate of 17.3 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 10.1, and the highest in Paisley, viz., 24.5 in a thousand. The aggregate number of deaths registered from all causes was 438, including measles, 6; scarlet fever, 6; diphtheria, 3; whooping-cough, 5; fever, 3; and diarrhoea, 20.

Netherlands.—The deaths registered in the principal cities of the Netherlands, having a population of 1,149,778, during the month of June, 1888, corresponded to an annual rate of 22.4 in a thousand of the population. The lowest rate was recorded in Haarlem, viz., 16.5, and the highest in Dordrecht, 32.9. The total number of deaths from all causes was 2,081, including typhus and enteric fever, 6; scarlet fever, 1; measles, 11; whooping-cough, 40; diarrhoea and dysentery, 35; and simple cholera, 7.

Calcutta.—Two thousand seven hundred and thirty-eight deaths were registered during the quarter ended June 30, 1888, including cholera, 514; fevers, 697; and dysentery and diarrhoea, 200.

Ruatan, Honduras.—The following reports have been received from the United States consul:

July 7th: "The malarial fever of a pernicious type which prevailed here from December to June seems to have disappeared."

July 14th: "Good health is enjoyed in this port and island."

July 21st: "Sanitary condition of this port and island remarkably good."

July 28th: "On the 19th instant the Board of Health of New Orleans declared this an infected port. 'No cause exists for such action.'"

Cardenas, Cuba.—The United States commercial agent reports, under date of August 24, 1888: "Good health prevails in town and harbor. No American vessels in port."

Havana, Cuba.—Thirty-five deaths from yellow fever were registered during the week ending August 24, 1888. Week ending August 31st, 15.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Glasgow	August 11.	545,678	203	..	..	..	..	1	2	..	..
Warsaw	August 11.	444,814	220	..	..	..	..	..	5	..	..
Calcutta	July 21.	433,219	159	12	..	..	..	..	..	..	..
Amsterdam	August 18.	389,915	120	..	..	1	..	2	..	..	..
Copenhagen	August 14.	300,000	108	..	..	..	..	..	3	..	..
Edinburgh	August 11.	262,733	75	..	..	..	..	1	..	..	..
Belfast	August 18.	227,022	70	..	..	..	..	1	..	..	..
Leipsic	August 11.	180,000	74	..	..	..	..	1	..	..	..
Leipsic	August 18.	180,000	57	..	..	..	..	..	1	2	1
Trieste	August 4.	154,500	87	..	..	4	..	..	..	..	..
Trieste	August 11.	154,500	86	..	..	2	..	..	1	..	..
Stuttgart	August 18.	125,510	42	..	..	..	..	..	1	..	..
Bremen	August 11.	118,000	50	..	..	..	..	..	1	..	2
Barmen	August 11.	109,000	38	..	..	..	..	..	1	..	..
Barmen	August 18.	109,000	39	..	..	1	..	..	1	1	..
Leith	August 11.	74,320	16	..	..	3	..	..	..	..	..
Mayence	July 21.	65,802	23	..	..	..	..	..	1	..	..
Mayence	July 28.	65,802	28	..	..	..	..	..	1	..	..
Cadiz	August 18.	65,028	50	..	..	..	..	..	..	..	..
Merida	August 14.	48,818	39	..	..	..	..	..	..	..	..
Merida	August 21.	48,818	27	..	..	1	..	..	..	..	..
Vera Cruz	August 23.	23,800	21	..	..	..	..	..	..	..	..
Gibraltar	August 12.	23,631	6	..	..	..	..	1	..	..	..
Kingston, Can.	August 24.	16,216	1	..	..	..	..	..	..	..	..
Sagua la Grande	August 18.	15,603	19	..	2	..	..	..	..	..	..
Laguayra	August 11.	7,428	3	..	..	..	..	..	..	..	..
Laguayra	August 18.	7,428	3	..	..	..	..	..	..	..	..

UNITED STATES.

San Francisco, Cal.—The secretary of the State and county health department, in his report dated August 28th, stated that "after the

absence of small-pox from this city since July 1st, the following cases have occurred: August 22d, 1 case; August 26th, 1 case; August 27th, 3 cases; August 28th, 3 cases. The source of infection can not be traced so far. All men from eighteen to thirty, some of them from the country."

Buffalo, N. Y.—Passed Assistant Surgeon Wheeler, Marine-Hospital Service, reported, under date of September 4th: "Since my last report (August 23d) there have been 14 new cases of small-pox in this city, and 2 deaths, making the whole number of cases up to date 35, and the number of deaths 6."

Coshocton, Ohio.—The president of the State Board of Health reported, under date of August 31st: "A case of small-pox is reported at Coshocton. The patient has been removed to quarters outside the village, and his dwelling disinfected. The origin of the disease is yet unknown."

Delaware Breakwater Quarantine Station.—The steamer *Progreso*, four days from Havana, arrived at this quarantine station September 3d, having left one of her crew in Havana sick with yellow fever. The schooner *Adele Thackeray*, also from Havana, arrived in the evening of the same day. The captain reports the loss on the voyage of two seamen from yellow fever. Two other members of the crew had the fever, but recovered during the voyage. All well on arrival. These vessels are now in quarantine.

Brownsville, Tex.—The collector of customs telegraphed September 3d as follows: "Quarantine against Matamoras terminated Friday. To-day Matamoras declared the retaliatory quarantine against Brownsville off. Business resumed at noon. No contagious or infectious sickness."

Manatee, Fla.—Surgeon R. D. Murray telegraphed:

September 4th: "One isolated case; Palmetto, 1 case on 31st; 14 in all to date. River villages healthy. Total cases recorded, 31. Last one on the 24th."

Tampa, Fla.—Dr. J. P. Wall telegraphed:

September 4: "Seven cases reported in last two days. Four positive; mostly mild type. No deaths."

Jacksonville, Fla.—Dr. Neal Mitchell, president of the Board of Health, telegraphed as follows:

August 31st: "For twenty-four hours ending 6 P. M.: New cases, 23; deaths, 4. Total cases, 211; total deaths, 30."

September 1st: "For twenty-four hours ending 6 P. M.: New cases, 23; deaths, 2. Total cases to date, 234; total deaths to date, 32."

September 2d: "For twenty-four hours ending 6 P. M.: New cases, 24; deaths, 2. Total number of cases to date, 258; total number of deaths to date, 34."

September 3d: "For twenty-four hours ending 6 P. M.: New cases, 37; deaths, 2. Total number of cases to date, 295; total number of deaths to date, 36."

September 4th: "For twenty-four hours ending 6 P. M.: New cases, 43; deaths, 1. Total number of cases to date, 338; total number of deaths to date, 37."

September 5th: "For twenty-four hours ending 6 P. M.: New cases, 50; deaths, 5. Total number of cases to date, 388; total number of deaths to date, 42."

September 6th: "For twenty-four hours ending 6 P. M.: New cases, 46; deaths, 10. Total number of cases to date, 434; total number of deaths to date, 52."

September 7th: "For twenty-four hours ending 6 P. M.: New cases, 77; deaths, 8. Total cases to date, 511; total deaths, 60." The number of cases under treatment is no longer furnished in the dispatches.

Camp Perry, Fla.—Passed Assistant Surgeon John Guitéras telegraphed as follows:

September 1st: "At muster, 152; discharged to-day, 13; arrivals yesterday, 30."

September 2d: "At muster, 158; received yesterday, 19; discharged to-day, 12."

September 3d: "Discharged well, 2; sent to Jacksonville with yellow fever, 1; expelled for misconduct and sent to Jacksonville, 9; eloped, 1; at muster, 147."

September 5th: "At muster, 145; admissions yesterday, 17; discharged to-day, 1; sent to Jacksonville, 5; at fever hospital, 2."

September 6th: "Discharged, none; sent to Jacksonville, 11; admitted yesterday, 12; in camp to-day, 146."

Four "railroad" houses were sent from Way Cross to Camp Perry on the 7th, and 25 more have been contracted for, to be set up as soon as possible. These houses will be set up as soon as possible to take the place of the tents, and a large barrack is being constructed. The Supervising Surgeon-General will take temporary command of the camp until it shall be thoroughly equipped for the regular passage of refugees. One special train conveying refugees to Atlanta was sent before the passage of the prohibitory resolutions. Another special will go to Hendersonville, N. C., this week. This point has an elevation of 2,100 feet.

Fernandina, Fla.—Dr. Julius Wise, who was sent to Fernandina as inspector, reported, under date of September 1st, as follows:

"Arrived at this place to-day and found sanitary condition as good as possible. There is no doubt that the case of Merriwether was not yellow fever."

Way Cross, Fla.—September 6th Dr. Posey reported, through Surgeon Hutton, that Gainesville, Palatka, and Orlando were healthy.

CONFERENCE AT AUGUSTA, GA.

[Telegram.]

AUGUSTA, GA., September 3, 1888.

At the suggestion of Governor Gordon, Surgeon-General Hamilton had a conference here to-day with the health authorities of several cities in the State and with the State health officers of Tennessee and Alabama, Governor Gordon being present, as also Mayor Lester, Dr. Brunner, and General Manager Haines, from Savannah, Ga., and Mayor Dunn, of Brunswick. At the conference the following telegram was read, which was received by the Surgeon-General:

"ATLANTA, GA., September 3, 1888.

"Surgeon-General J. B. HAMILTON (care Mayor, Augusta, Ga.):

"I am instructed to wire following resolutions adopted at noon to-day:

"*Resolved*, That the Board of Health of the City of Atlanta, his honor the mayor co-operating, cordially approves the plan of the Surgeon-General of the United States, requiring ten days' quarantine of all persons from infected or suspected districts in Florida conveniently near to infected points.

"*Resolved*, That the wholesale removal of persons from infected districts to populous cities and the aggregation of infected individuals in any part of this country is regarded as hazardous in a sanitary point of view, and is unjust to any community upon whom such persons are forced, because of the probable necessity of maintaining many of them at the corporate expense.

JAMES M. BAIRD, Secretary."

After discussion of these resolutions, the following resolutions were adopted by the conference:

Resolved, That this convention cordially approves the plan of the Surgeon-General of the United States Marine-Hospital Service requiring ten days' quarantine of all persons from infected or suspected places, together with fumigation and other disinfection of baggage, etc., from infected points.

Resolved, That the wholesale removal of persons from infected districts to populous cities and the aggregation of individuals from infected places in any city of this country is regarded as extremely hazardous to any such community; also, that the citizens of Jacksonville have no just cause for complaint against the quarantine regulations as at present operated, inasmuch as abundant provision has been and will be made by establishing healthful and cleanly camps for the inhabitants of Jacksonville, and provision made for maintenance of such citizens during detention in camp.

Resolved, That, in the judgment of this convention, after the suspects shall have been detained in quarantine camp for ten days and their baggage shall have been fumigated under direction of United States Government, such persons should be permitted to go to any community willing to receive them.

An inspection of Camp Perry was made by the Surgeon-General on Tuesday.

Nashville, Tenn.—The president of the Board of Health telegraphed September 6th: "Unless refugees have been in camp ten days, baggage

disinfected, and each hold your certificate of health, they will not be admitted to State. The Augusta agreement is approved."

Atlanta, Ga.—September 7th the secretary of the Board of Health telegraphs: "Atlanta relies upon the Camp Perry quarantine and the decision at Atlanta conference."

Macclenny, Baker County, Fla.—Mayor Reese, of Montgomery, Ala., telegraphed September 7th as follows: "Our special agent reports 10 cases of yellow fever at Macclenny; 1 death from black vomit. Pensacola and Marianna have quarantined against whole of Baker County. We will proceed to follow their example, and this only exemplifies the fact that the measures that you have already taken are right" This town is on the F., R. and N. R. R., west of Jacksonville, between Baldwin and Lake City.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y....	Sept. 1.	1,533,804	831	1	15	25	23	16	17	4			
Philadelphia, Pa....	August 25.	1,016,758	454	1	11	2	7		4				
Philadelphia, Pa....	Sept. 1.	1,016,758	332		24	3	5		3				
Brooklyn, N. Y....	Sept. 1.	793,960	353		2	4	4		1				
Baltimore, Md....	Sept. 1.	431,879	172		5		7		3				
Boston, Mass....	August 25.	415,000	202		5		7		1				
Boston, Mass....	Sept. 1.	415,000	217		7		4						
San Francisco, Cal....	August 24.	330,000	130		3		2		2				
Cincinnati, O....	Sept. 1.	255,139	105		2		5		1				
Pittsburgh, Pa....	Sept. 1.	230,000	97		8	2	2		1				
Washington, D.C....	Sept. 1.	225,000	113		6								
Louisville, Ky....	Sept. 15.	200,000	46		3								
Milwaukee, Wis....	Sept. 1.	195,000	81		2		1						
Kansas City, Mo....	Sept. 1.	180,000	37		3								
Minneapolis, Minn....	August 31.	180,000	65		4		1						
St. Paul, Minn....	Sept. 1.	175,000	47		6		1		2				
Rochester, N. Y....	Sept. 1.	120,000	46		3								
Detroit, Mich....	Sept. 1.	116,340	84		1	3	2						
Richmond, Va....	Sept. 1.	100,000	33		3								
Denver, Col....	August 31.	96,000	34		5		5						
Columbus, Ohio....	Sept. 1.	93,000	27		2								
New Haven, Conn....	August 25.	82,000	30										
New Haven, Conn....	Sept. 1.	82,000	27		3								
Toledo, Ohio....	Sept. 1.	80,000	21		2								
Nashville, Tenn....	Sept. 1.	65,153	14										
Fall River, Mass....	Sept. 1.	65,000	35				1		1				
Charleston, S. C....	Sept. 1.	60,145	37										
Cambridge, Mass....	Sept. 1.	59,660	34		3		1						
Evansville, Ind....	August 30.	53,000	23										
Savannah, Ga....	August 24.	52,827	14				1						
Lynn, Mass....	Sept. 1.	50,000	24										
Council Bluffs, Ia....	Sept. 1.	45,000	19		1				4				
Manchester, N. H....	Sept. 1.	41,000	17				1						
Mobile, Ala....	Sept. 1.	40,000	15		1								
Portland, Me....	Sept. 1.	40,000	9										
Galveston, Tex....	August 24.	40,000	13										
E. Saginaw, Mich....	Sept. 1.	33,000	13										
Burlington, Ia....	August 29.	30,166	6										
Davenport, Ia....	Sept. 1.	30,084	7										
Altoona, Pa....	August 25.	29,546	5						1				
Salem, Mass....	Sept. 1.	29,000	17										
New Albany, Ind....	August 31.	28,689	8										
Yonkers, N. Y....	Sept. 1.	27,500	12										
New Bedford, Mass....	Sept. 1.	26,845	22										
Haverhill, Mass....	Sept. 1.	25,000	8					1					
Jackson, Mich....	Sept. 1.	22,500	7						1				
Newton, Mass....	Sept. 1.	21,105	13						1				
Newport, R. I....	August 30.	20,466	4										

Effect of Acids on the Sense of Taste.—"The intensity of the sour taste of an acid," says the "Lancet," "appears to be related to its chemical composition. Dr. Corin found that the intensity of the sensation of sourness produced by different acids of an equal degree of strength was not the same, neither was it proportional to the amount of replaceable hydrogen. The effect on the sense of taste was found, however, to vary with the atomic weight with solutions containing an equal amount of acid hydrogen replaceable by metal; so that the acid taste was stronger in proportion as the molecular weight was lower."

The Influence of Typhoid Fever on Some Other Diseases.—"That diseases characterized by hyperkinesis may disappear at the onset of typhoid fever," says the "Lancet," "is fairly well known as regards chorea. Couturier has observed a case of disseminated sclerosis in which great amelioration of the symptoms was apparently produced by an attack of typhoid fever, the ankle clonus and other exaggerated movements being notably diminished. The difficulty, however, of separating some cases of spinal sclerosis from functional spasmodic para-

plegia must be remembered. A sudden event, or one of some intensity, often makes a difference in cases of neurasthenia, but the difference is not always in the direction of improvement; a fright has cured paraplegia and, on the other hand, has made paraplegia worse."

Galvano-puncture in Goitre.—According to the "Lancet," "Dr. Weinbaum reports, in a recent number of the 'Vrach,' two cases of goitre in girls, occurring shortly after menstruation had been established, which were entirely cured by passing the current from a battery of twenty cells through the tumor by means of two gold needles inserted into opposite sides of the growth for the depth of a few millimetres. In one case 150 sittings were required. These were prolonged during eight months, as small eschars frequently formed round the cathode, and it was thought well to give these time to heal before repeating the treatment. Each sitting lasted from ten to fifteen minutes. It is noteworthy that, after the tumor in this case had to a large extent become absorbed, the girl's general condition began to give rise to some alarm, cough, night-sweats, and amenorrhœa coming on. However, by means of arsenic and iron, the patient ultimately recovered, and has enjoyed excellent health since, the only signs of the goitre being the cicatrices due to the needles."

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

ON MEDICAL MUSEUMS,

WITH SPECIAL REFERENCE TO THE ARMY MEDICAL MUSEUM
AT WASHINGTON.

THE PRESIDENT'S ADDRESS BEFORE THE
CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS,
Washington, September 20, 1888.

BY JOHN S. BILLINGS, M. D., LL. D.,
SURGEON, U. S. ARMY.

GENTLEMEN OF THE CONGRESS: Our articles of confederation require that the president shall give an address. In endeavoring to comply with this regulation I must ask your indulgence, for, while I think I have something to say, I can not give you such a discourse as would befit the audience, the occasion, and the subject.

The prominent characteristic of the great majority of the societies composing this Congress is that their members have, as a rule, been chosen because they have either made some valuable contribution to medical literature, or have, in some way, rendered aid to the profession; in other words, they are supposed to be men whose labor and thought have not been confined to their own interests, or to those of their own patients. It may, therefore, be assumed that you are all interested in medical science, not merely as a means of giving new modes of diagnosis or of treatment, but also for its own sake, for the sake of knowing, for the pleasure of investigation, and in the hope of helping others, and that, while the majority have devoted themselves more or less to special branches, they have not, in so doing, lost interest in what may be for the general good of the whole profession.

I am here as the representative of the medical departments of the General Government, which has need of the best knowledge of all the specialties, and is beginning, in its turn, to do something for each.

The physicians in the Government service are all general practitioners, and are expected to have such an education and training as will fit them to deal, alone and without consultation, with the diseases and injuries to which men, women, and children are liable. You have been, and still are, their teachers—in the lecture-room and the hospital before they entered the service—in your text-books, monographs, and contributions to journals or transactions which follow them to their widely scattered posts of duty. They are your warm friends; the more you discover, the greater your skill, the more recognition which your work receives, the better they are pleased.

Within the last twenty-five years the General Government has, in its turn, done something for medicine and for you by founding and maintaining a medical library and museum in Washington under the direction of the Medical Department of the Army.

I have had occasion several times to call attention to the library, which no doubt is that part most immediately useful to physicians, and which has attracted most attention. To-night I propose to speak of the other branch, in whose proper development it is desirable that you should take an

intelligent interest, and, after giving a brief sketch of the development of modern medical museums, we will consider more especially our own national medical collection as it is, and as it ought to be.*

The origin of collections of objects of natural history was possibly, as suggested by Beekman, the custom of keeping curious objects in temples; but we have no record of the formation of any collections specially connected with anatomy or medicine before the sixteenth century. It is true that human anatomy had been introduced in the schools by Mundinus in 1306, and that, no doubt, in Bologna, in Paris, and a few other places, a skeleton or two was preserved for purposes of instruction; but alcohol was unknown as a preservative before the end of the fifteenth century, anatomical details were of no interest until Vesalius had stirred up controversy with the Galenists, and injected preparations were not thought of until after Harvey's announcement, in 1628, of the discovery of the circulation of the blood.†

The introduction of the use of the microscope at the beginning of the seventeenth century, and the collections of preparations for use with this instrument made by Leewenhoek and Ruysch, gave a powerful stimulus to the formation of museums of this kind. The most famous of these collections was that of Ruysch, purchased in 1717 by Peter the Great, and sent to St. Petersburg. Ruysch was practically the first to prepare injected anatomical specimens for permanent preservation, and, if the stories told of his work are true, he made preparations which have never been surpassed. His museum was a very ornamental one, the bones and skeletons being arranged in various devices, the plants in bouquets, while scattered through the whole were beautifully engrossed sentences from the Latin poets.

The most famous medical museum in the latter half of the eighteenth century was that founded by Fontana, at Florence. This still exists, filling a series of rooms, and consists mainly of wax preparations, beautiful to look at, but inaccurate, and of little scientific value.‡

* As a "museum," in the original sense of the word, is a building or place in which are collected objects of interest to the muses—that is, objects of art, literature, etc.—the phrases "medical museum," "museum of pathology," etc., would have seemed quite improper in the days of Hippocrates, just as the prevailing pronunciation of the word mu'seum grates on the ears of the elders accustomed to the strictly proper way—i. e., muse'um. Custom has, however, so strongly sanctioned the use of the word museum in the sense of a collection of different articles, that it would be folly to attempt to give it a more limited signification, and, though lexicographers still recognize only the word as accented on the penultimate syllable, the tendency to accent the first syllable is so strong and constant that it is safe to predict that mu'seum will, in popular usage in this country, ultimately win the day.

† For accounts of the collections formed between the days of King Solomon and the end of the seventeenth century, consult tome ii of the "Musei museorum" of Michael Bernhard Valentin, in folio, published at Frankfort in 1714, wherein are curious engravings of many of the wonders contained in these museums. See, also, Hagen (H. A.), "The History of the Origin and Development of Museums," "American Naturalist," 1876, x, p. 80.

‡ The first use of wax models to represent pathological specimens or dissected preparations of parts of the human body is attributed to a Sicilian priest, Gaetan Jules Zambo, who lived in the latter part of the

LOCALITY AND NAME OF MUSEUM.	Total number of specimens.	NUMBER OF SPECIMENS IN EACH DEPARTMENT.					Number of speci- mens added dur- ing the last five years.	Amount expend- ed during the last five years.
		Compara- tive anatomy.	Normal human anatomy.	Embry- ology.	Patho- logical anatomy.	Materia medica.		
UNITED STATES.								
Albany:								
Medical College Museum.....	5,500	250	1,250	200	3,100	700	770	\$660
Boston:								
Warren Anatomical Museum, Harvard University.....	7,900	....	....	....	....	....	470	8,973
Chicago:								
Chicago Medical College Museum.....	1,332	122	300	10	200	700	....	....
Rush Medical College Museum.....	850	70	100	50	100	200	....	....
Cincinnati:								
Miami Medical College Museum.....	3,078	450	603	75	823	1,002	....	....
Museum of Hospital and Pathological Department of Cincin- nati University.....	1,250	....	..	....	1,250	....	....	889
Louisville:								
Medical Department of the University of Louisville Museum.	1,992	276	275	127	868	446	....	2,250
New Orleans:								
Museum of Tulane University.....	2,500	....	..	....	....	....	....	500
New York:								
Pathological Cabinet of New York Hospital.....	2,366	....	....	....	2,366	....	542	14,028
Museum of Medical Department, University of New York...	8,000	1,000	4,000	500	2,500	....	50	7,250
Wood Museum, Bellevue Hospital.....	2,224	256	282	69	1,613	....	....	....
Philadelphia:								
Mütter Museum, College of Physicians.....	3,700	296	242	140	3,000	....	....	....
Wistar and Horner Museum, University of Pennsylvania....	7,458	919	1,355	292	2,717	2,175	....	2,950
Jefferson College Museum.....	2,500	....	....	....	....	....	1,000	....
Washington:								
Army Medical Museum.....	14,360	1,685	2,853	108	8,354	814	3,789	23,356
GREAT BRITAIN AND IRELAND.								
Birmingham:								
Museum of Queen's College.....	3,270	277	652	107	1,400	834	1,250	....
Cambridge:								
University Museum.....	....	120,000	4,000		....	....	....	50,000
Dublin:								
Trinity College Museum of Normal Human Anatomy.....	562	....	442	120	....	....	362	2,175
Trinity College Museum of Anatomy and Zoölogy.....	14,125	13,580		....	....	....	1,000	4,000
Trinity College Pathological Museum.....	4,815	....	....	....	4,815	....	650	....
Trinity College Museum of Materia Medica.....	200	....	....	....	....	....	....	....
Museum of Royal College of Surgeons.....	9,797	3,756		71	5,001	1,139	....	* 10,280
Edinburgh:								
Anatomical Museum of University of Edinburgh.....	10,000	6,000		....	4,000	....	310	5,975
Museum of Royal College of Surgeons of Edinburgh.....	6,700	1,000	1,050	350	4,000	....	....	....
Liverpool:								
Anatomical and Pathological Museum, University College...	2,347	87	97	93	1,500	570	600	3,655
London:								
Museum of Medical School of St. Bartholomew's Hospital...	7,000	250	1,200	150	5,500	1,400	939	† 6,740
Museum of Guy's Hospital.....	11,500	1,929	1,504	62	7,515	500	358	10,066
Museum of King's College.....	6,500	3,000	323	177	2,508	874	299	....
Museum of Royal College of Surgeons.....	28,015	4,278	3,576		5,011	....	1,068	61,210
Museum of St. George's Hospital.....	6,010	345	457	134	4,644	430	356	3,800
St. Thomas's Hospital Museum.....	5,940	673	656	....	4,017	594	520	† 4,560
Pathological Museum of Charing Cross Hospital.....	1,265	....	....	....	1,265	....	....	....
Museum of University College.....	7,500	391	765	270	5,000	1,000	641	8,750
Manchester:								
Medical Museum of Owen's College.....	6,694	1,763	281	135	2,515	2,000	....	....
Norfolk:								
Norfolk and Norwich Hospital Museum.....	2,537	156	100	30	2,251	....	71	400
Oxford:								
University Museum.....	8,500	6,922			....	....	580	8,145
FRANCE.								
Paris:								
Dupuytren Museum.....	6,700	....	....	....	6,700	....	300	5,000
Orfila Museum.....	14,027	....	....	....	....	....	500	3,900
GERMANY.								
Berlin:								
Anat. Museum of the Path. Inst. Fried. Wilh. University...	17,600	....	....	....	17,600	....	1,526	....
Anatomische Sammlung.....	3,000	1,000	1,500	500	....	....	374	3,750
Pharmakologische Sammlung.....	2,000	....	....	....	....	2,000	600	750
Kiel:								
Anatomisches Institut der Universität.....	2,390	....	1,520	870	....	....	350	5,775
Zoologisches Institut.....	15,000	3,000	....	....	....	....	....	9,158
Leipsic:								
Anatomische Anstalt.....	3,200	3,200			....	....	....	....
Pharmakologische Anstalt der Universität.....	2,500	....	....	....	....	2,500	....	....
Strassburg:								
Pharmakologische Institut der Universität.....	1,720	....	....	....	....	....	485	6,650
Anatomisches Museum der Universität.....	2,500	800	1,580	120	....	....	609	1,875
Pathologisches Institut.....	8,000	....	....	....	8,000	....	625	6,250

* Four years (1883 to 1886, inclusive).

† Four years (1883 to 1886, inclusive).

‡ In 1885 and 1886.

LOCALITY AND NAME OF MUSEUM.	Total number of specimens.	NUMBER OF SPECIMENS IN EACH DEPARTMENT.					Number of speci- mens added dur- ing the last five years.	Amount expend- ing the last five years.	
		Compara- tive anatomy.	Normal human anatomy.	Embry- ology.	Patho- logical anatomy.	Materia medica.			
AUSTRIA-HUNGARY.									
Budapest:									
Path. Anat. Institut der Universität	2,560	....	....	....	2,560	....	275	1,000	
Wien:									
Museum der anatomischen Anstalt	3,582	77	3,212	293	....	....	333	....	
ITALY.									
Bologna:									
Museo di anatomia patologica umana	2,472	....	....	....	2,472	....	154	\$1,250	
Museo di anatomia comparata	6,334	6,334	....	....	....	....	175	2,500	
Museo di anatomia veterinaria	1,042	1,034	8	....	....	....	551	8,450	
Museo di patologia comparata	3,473	....	....	....	3,473	....	76	800	
Museo di anatomia umana normale	4,414	....	4,414	....	....	....	248	605	
Pavia:									
Gabinetto di anatomia umana dell' Università	2,678	....	2,493	185	....	....	300	2,900	
Museo di anatomia e fisiologia comparate	5,094	4,580	....	370	....	....	....	4,300	
Istituto di fisiologia	385	....	....	210	....	....	....	....	
Gabinetto di anatomia patologica	2,300	....	....	....	2,300	....	450	....	
Inst. di patologia generale ed istologia	2,500	....	....	150	2,350	....	500	2,200	
Museo Porta—anatomia e patologia chir.	1,848	....	....	....	1,848	....	....	1,340	
Istituto ostetrico-ginecologico	372	....	....	....	372	....	....	2,970	
Gabinetto dermosifilopatico	258	....	....	....	258	....	200	250	
Gabinetto di materia medica	1,000	....	....	....	....	1,000	350	1,780	
Manicomio Provinciale di P. in Voghera	543	....	....	....	....	....	250	....	
Torino:									
Inst. di anatomia normale dell' Univ.	12,000	....	12,000	....	....	....	3,000	7,000	
Museo di zoologia ed anatomia comparata	2,500	2,500	....	....	....	....	....	....	
Collezione di antropologia criminale	2,000	....	2,000	....	....	....	....	....	
Museo di materia medica	700	....	....	....	....	700	100	2,000	
Museo di anatomia patologica	800	....	....	....	800	....	480	3,000	
Riberi Ospedale S. Giovanni	887	....	....	....	887	....	389	2,040	

During the first half of the present century a number of private collections were formed by anatomists, pathologists, and surgeons. Most of these have become public collections, either by gift or purchase, and the rest have been dispersed or destroyed. There is not in existence at the present time any large collection of specimens pertaining to human pathology which is the property of an individual, and is at all comparable to those made by John or William Hunter, Astley Cooper, Howship, Liston, or others. Commenting on this fact, Sir James Paget writes me that he does not know of any large private pathological collection, and that he believes the change to be entirely for the better.

The necessities of modern progress in anatomy, physiology, and pathology have led to the creation of medical museums in all parts of the civilized world. In most of the continental capitals these are connected with universities supported by the state. In Great Britain and in this country they are, as a rule, connected with private or semi-private institutions for medical teaching. This difference is connected with the relative position which medicine holds in the educational machinery of the state in different coun-

tries. Where medical education is furnished by institutions directly supported by the government, the museums, which are a part of the apparatus required, are, of course, also supported by the government.

Through the aid of friends, whose kindness in replying, or in obtaining replies, to somewhat troublesome inquiries I can not sufficiently acknowledge, I have obtained certain data with regard to some of the most important medical museums now existing in the world, and a part of these data are summarized in the table before you.

Evidently the city having the most valuable aggregate of anatomical and pathological specimens at the present time is London, which contains the collections of the Royal College of Surgeons, of St. Thomas's, Guy's, St. Bartholomew's, St. George's, and other hospitals, and of University College, the College of Physicians, and others. The oldest public anatomical museum in London is probably that of St. Bartholomew's, which, in 1726, had a room set apart for the purpose under the charge of John Freke, and which received the private collection of Abernethy. The most important medical museum in the world, and the one which has exercised the greatest influence in giving direction to anatomical and pathological studies, and in serving as a model for the formation of other collections, is undoubtedly that of the Royal College of Surgeons of London, the foundation of which was the collection made by John Hunter, purchased by the government in 1799. In one sense it is not a government institution, the funds from which it is now supported not coming directly from government grants; but, in another sense, it is truly such, since the college may be looked upon as an agent of the government having special charge of matters connected with medical education, as it is

seventeenth century, and who had been accustomed to make wax models of diseased or deformed hands, feet, etc., to be used as *ex voto* offerings at the shrines of certain saints. The fame of these induced a Florentine surgeon, Ricci, to visit the priest and to get him to model some pathological specimens which he furnished. A Franciscan named Desrones brought this art to France, and made many such models between the years 1703 and 1706, and Bianchi formed a large collection of the same kind in Italy. It was scattered after his death, and the last vestiges of it were two models representing a healthy and a diseased liver, which were to be seen in Innsbruck in 1766.—Percy et Laurent, in "Dict. des sci. méd.," Paris, 1818, vol. xxxv, article "Museum."

the principal examining body for those proposing to practice surgery in Great Britain.

The great value of the Hunterian collection lies in the breadth of its scope, which includes every branch of medical science; but it is pre-eminent in illustrations of human morphology and its abnormities. The museums of the great hospital medical schools are relatively richer in the department of pathological anatomy, specimens of which they have greater facilities for obtaining. Among these there is, of course, a certain amount of duplication of matters of interest; but no two pathological specimens are precisely alike, and the question discussed in the Paris school one hundred and fifty years ago, viz., "*An pro distinctis ægris ægritudines diversæ?*" is one that often occurs to a curator as he examines new specimens which differ but little from those already in his collection, but which do differ in some respects, and with regard to which he must decide as to whether, upon the whole, they are worth the trouble and cost of preservation.

Edinburgh and Dublin have also each large and valuable collections pertaining to anatomy and medicine.* In Paris the medical museums are those of the Faculty of Medicine, including the Musée Dupuytren, devoted to pathological anatomy, and the Musée Orfila, devoted to human and comparative anatomy, materia medica, natural history, and instruments and apparatus.

Professor Léon Le Fort, to whom I am indebted for data with regard to these collections, remarks that a large proportion of the anatomical specimens of the Orfila museum come from candidates who take part in *concours* opened for positions connected with the anatomical teaching of the faculty—such as prosectors, demonstrators, etc., each candidate being required to furnish from ten to thirty specimens.

The medical museums of other European countries are connected, as a rule, with universities, and it is to be remembered that in these the different branches of medical instruction are each both more specialized and more comprehensive than is the rule with us. The professor of anatomy, of physiology, of pathology, has each his own building or institute, and, therefore, each his own museum; and unless this fact is held in view, comparisons between continental and English, or American, medical collections may give very erroneous results.

With regard to the museums connected with American medical schools I will say little, referring you to the table and appended notes for such data as I have been able to collect. I am aware that in so doing I put aside a splendid opportunity to enlarge upon the general superiority of all these collections and the peculiar excellences of each, but I think that you all know as much about these as I do, and there is time only for details with regard to the one Ameri-

can museum in which I am specially interested. I will say only that the best museum connected with a medical school in this country is the Warren Museum in Boston, and that the history of the collections of wax models upon which several of our museums have expended large sums of money is very instructive as to how not to do it.

So far as mere number of specimens is concerned, our own national medical collection is one of the eight largest in the world, and is increasing more rapidly than any other.

This collection, known as the Army Medical Museum, owes its inception to Dr. William A. Hammond, one of whose first acts after becoming surgeon-general, in 1862, was to issue a circular stating that "as it is proposed to establish in Washington an army medical museum, medical officers are directed diligently to collect and to forward to the office of the Surgeon-General all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable, together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine or surgery."*. By the end of the year over a thousand specimens had been collected, and the catalogue printed in 1866 showed that it contained 7,716 specimens. It is not my purpose in this address to trace the history of its development; that must be done elsewhere. It has recently been placed, with the Library, in a conveniently arranged fire-proof building, and on the 1st of July last contained over 15,000 specimens besides those contained in its microscopical department, divided as follows:

Comparative anatomy.....	1,689
Pathological "	8,354
Medals.....	384
Microscopical specimens.....	10,416
Normal human anatomy... ..	2,961
Instruments and apparatus.....	814
Microscopes	141
Miscellaneous.....	835

Besides these, there are 375 specimens pertaining to normal human anatomy and 726 to pathological anatomy, which are in what is called the provisional series.

It is not, however, by number of specimens that the importance and value of museums of this kind can be judged, and in this case such a comparison would give an exaggerated and erroneous idea of the value of this collection. My object in this address is not to boast of what we have, but to indicate what we want; to point out what a national medical museum, arranged to meet the wants and interests of this country, should be, should have, and should do, and to suggest some of the ways in which this is to be brought about.

At first the Army Medical Museum was limited to military medical subjects, but of late years its scope has been greatly broadened, and is now nearly the same as that of the Royal College of Surgeons. It includes human anatomy, physiology, pathology, somatological anthropology, in-

* I am indebted to Sir James Paget for the information given with regard to the greater number of the British museums. I had originally intended to attempt to obtain such data only from four or five of the largest; but on my sending my little list of questions to Sir James he took such a kindly interest in the matter as to send a copy of these queries to a number of other museums, with the request that they might be answered.

* Circular No. 2, Surgeon-General's Office, Washington, D. C., May 21, 1862.

struments and apparatus, and illustrations of methods of teaching connected with special departments of practical medicine. It does not at present include hygiene or materia medica, except in their immediate relations to the military medical service, and this for reasons which will be stated presently. That our National Medical Museum should be broad and comprehensive in its scope there can be no doubt, its requirements in this respect being quite different from those of collections formed and used more especially for the purpose of teaching medical students. The most practically valuable of these last are those formed by individual professors to suit their own specialties and methods of teaching. They need not, as a rule, be large. I may even say that they should not be large; for the labor of properly preserving a large collection is great, and the student, with his limited time and want of knowledge of what to look for, can examine but few specimens so as to profit by them. For the same reason specimens of rare abnormalities, of double monstrosities, etc., are of little use in ordinary medical teaching as given in this country, and are not specially desirable in the museums of our medical schools.

You may have noticed that, in speaking of the scope of our museum, I said it included "human anatomy." This phrase does not mean that it has no specimens illustrating the structure of other animals—for it has many, and needs many more; but it means that in this department its main purpose is not to make comparative anatomy an end to itself by exhibiting all known variations in structure throughout the animal kingdom as a basis for their study in relation to development and environment, causation and results. In other words, it is not an anatomical museum, but a medical museum. The broad field of general biology, including natural history and comparative anatomy, will ultimately be covered by the National Museum, and in our medical collection it will be quite enough to illustrate human anatomy fully, using so much of the structure of the lower animals as will be useful in explaining why certain parts of the human body are thus and so, and not otherwise. No sharp line of distinction can be drawn between the field of work of the general and that of the medical museum. So far as morphology is concerned, they must necessarily overlap somewhat, since both want a certain number of the same specimens, although using them to illustrate different points of view.

The medical museum should possess a series of specimens showing the normal anatomy of the domestic animals, or of animals used in experimental pathology, pharmacology, or physiology as a basis for comparison with abnormal or pathological specimens derived from the same animals. It is in the section of embryology, illustrating laws of heredity and development, that specimens from the lower animals are most interesting, and this is especially the case in the study of human abnormalities and monstrosities. It is quite possible that to some anatomists it may seem that no limitation should be placed to the scope of the museum in this direction, for it is easy to trace some connection between any variation in structure in any animal and some structure, normal or abnormal, in man, but

the limitation is placed, with reference to the work of the National Museum, so as to secure the best results.*

The kind of specimens most valued for illustrating anatomy in a museum is now very different from what was sought for in the first half of this century. Dried and varnished dissections showing blood-vessels, etc., are now looked on as nearly useless, and are kept only as historical relics. Elaborate dissections under alcohol, mounted in opaque dishes, with flat glass covers, and sections of frozen bodies, similarly mounted, are what the student and the practitioner most desire to see. In our museum there are some excellent specimens of this kind, prepared under the direction of Professor His, of Leipsic; of Professor Cunningham, of Dublin; and by our own anatomist, Dr. Wortman. These, however, are only samples to show how the work should be done. We require several hundred such specimens to illustrate properly regional anatomy in relation to age and sex, while the possible applications of the same methods to the illustration of visceral displacements, hernias, and deformities of all kinds are boundless. As regards physiology, but little can be done by museum specimens to illustrate function as distinguished from form and structure. The so-called physiological series in the Hunterian collection is a series of organs illustrating variations in different families of the animal kingdom or at different ages—in other words, it illustrates ontogenic and phylogenetic development. The things students or teachers of physiology are most anxious to see in a museum are specimens of instruments and apparatus employed in experimental physiology, or in the measurement of the special work of different organs, or in illustrating lectures on physiology. Illustrations of results obtained in experimental pathology often belong quite as much to physiology; as, for example, specimens of results of Gudden's atrophy method.

The Army Medical Museum has only a beginning of such an anatomical collection as I have indicated as desirable. Like all other museums, it is richer in specimens illustrating osteology than in any other branch of anatomy, simply because such specimens are the easiest to obtain and preserve. We are accustomed to think that human anatomy is nearly exhausted as a field for original research, and that, at all events, every important organ or muscle or nerve has been figured, described, and named. Granting this, so far as the adult is concerned, although it is by no means true even for him, we have still to study the development of each of these organs or groups of organs, as seen at different ages, and, for some of them, in different races. As fast as these points are seen to be of practical interest, either in connection with diagnosis or the surgical treatment of disease, they are investigated; but an ideal museum should furnish the investigator the means for his researches; and it must, therefore, collect specimens without special regard to what is at present known to be their practical interest. The

* In the great majority of medical schools in this country anatomical teaching has a much more limited field than in the German universities, and our professors of anatomy, following English traditions, are usually in training for surgery. We have, however, several who are devoting their entire work to anatomy in the broad sense and for its own sake, and it is in this direction that progress will be made.

collection of such series of specimens of each joint, region, and organ as I have in mind, including sections and dissections at different ages, from the earliest appearance in foetal life to extreme old age in man, and in many cases in the lower animals, is a slow process. Such specimens, and especially such series of specimens, can only be prepared by a skilled anatomist, and there are few such; hence the formation of our ideal anatomical collection, limited though its scope may be, must be a work of time.*

There is ample material and scope for original work for half a dozen skilled anatomists, for many years to come, to supply the demands of this museum for illustrations of human morphology in its various relations, and it is not desirable to scatter effort over too wide a field.

The pathological section of a medical museum is its main feature, being, as Mr. Flower remarks, the section to which, in the eyes of Hunter and his successors, all others form merely the introduction. It is true that to some physicians specimens in this department seem to have little value; but they are balanced by those physicians whose chief interest in a case of disease is to get a post-mortem. No doubt much of the ancient pathology, and some of that which is quite recent, is comparable to the looking in the dark for a black spot which is not there, but those who despise pathology, and devote their entire attention to symptoms and treatment, err as much on one side as those who talk and act as if a knowledge of pathological anatomy could take the place of clinical experience do on the other. I do not know, however, that the doctrine usually preached—viz., that each man should attain the just mean in his views—is a true one. Certainly it is not the principle on which the universe seems to be constructed; the balance is maintained, not by having everything exactly symmetrical, but by excess in one direction balancing excess in another.

To secure pathological specimens in their most instructive forms for museum purposes requires, in many cases, not only considerable variation from the usual routine methods of post-mortem examinations, but very considerable delay in ascertaining the results. If, for example, we wish the best specimens of the results of cerebral disease, the brain must not be removed and sliced up in the usual manner; it should be hardened *in situ* to a certain extent, and its sections should be carefully considered with reference to their preservation in their relations to each other before they are actually made. There is need of a treatise by a skilled pathological anatomist giving such methods in detail from the modern point of view.

Thus far, the great majority of contributions of pathological material to our museum have been made by army medical officers; but some of the most valuable specimens have come from practitioners in civil life, and it is to these last that we must appeal for illustrations of the effects of disease in all parts of the country. There are difficulties in the way, of course. The physician in private practice does not make post-mortem examinations in five per cent. of the

cases of death of patients under his charge, and when he does come into possession of an interesting specimen he is very naturally inclined either to keep it himself, especially if it is an osteological one which can be preserved with little expense or trouble, or to put it in the little collection which has been formed at the dispensary, or asylum, or hospital. I hope, however, that when it becomes known that we are trying to form in Washington a complete medical museum for the benefit of the whole medical profession, and that we have the means of permanently and securely preserving, and exhibiting to the best advantage, the specimens sent to us; I say that I hope and believe that when this is understood many physicians will be willing to take a little trouble, and to give up something of their very natural impulse to keep a trophy of their skill, or a curiosity to talk about, in order to promote the general good.

As a rule, single specimens of abnormality or of disease have little scientific value; it is only when they are associated with others that they both furnish and receive light. To this audience it is unnecessary to give other reasons as to why physicians should contribute material to the national collection, nor as to why the curator of this collection is justified in being very bold in requesting such material; but there is one objection to parting with certain specimens which is sometimes made, and to which I will refer, because it brings up one of the ways in which our ideal medical museum can meet a practical need of the family practitioner. The objection I refer to is, that the specimen may be important from the point of view of medical jurisprudence; that it has a special bearing in certain suits for malpractice, etc., and that, therefore, the owner wishes to keep it to be used as testimony to protect himself or his neighbors. There is some truth in this; but it is also true that such specimens brought together in the National Museum would be just as available as ever for the protection of the rights of the individual physician, while they would also be available for the benefit of the whole community.

Whether the specimens preserved are, or are not, desirable for and useful to the museum, it is certain that the securing and forwarding them is a very useful thing to the physician who does it. It tends to keep him in touch with the current living thought and work of the profession, to direct his attention to the connection between symptoms and the mechanism of their production, which is often so important in deciding on the remedy to be used, and, above all, it gives him an interest in other men's work, and thus broadens his views and increases his knowledge and pleasure.

Having obtained the specimens, the next difficulty is so to prepare and preserve them that they shall be available for study. The great majority can not be preserved in such a manner as to retain their natural color, size, and texture. No doubt more might be done in this direction than is usually done. It is possible to stain or paint portions of specimens in such a way as to give some idea of the normal appearances, but thus far, I think, experience shows that the best medium for the permanent preservation of wet pathological specimens is alcohol, and this will contract and harden most tissues, and remove the color from nearly all. It is also an expensive mode of preservation for large col-

* As Sir William Turner remarks: "Where a question in human embryology hinges upon an examination of parts in a very early state of development, we have often to wait for many years before an appropriate specimen falls into the hands of a competent observer."

lections, and requires constant care to prevent the effects of evaporation. It does not follow, however, that such specimens are of little value, and that, as some have urged, it would be better to seek to obtain records of the results of disease by colored drawings or models. The pathological specimen, whether seen at the post-mortem or years afterward in a museum, is, to the scientific pathologist or the practical physician, merely a sign or hieroglyph of the morbid process which has produced it; it is a result, in most cases, of interest not in itself, but because of the preceding phenomena which it connotes. As Sir James Paget has said, the same objection—viz., that museum specimens are unfit for the teaching or the study of pathology—might be made to the study of botanical specimens in an herbarium. "In both cases alike, the changes produced by preparation are so far uniform that any one accustomed to recent specimens (and no others should study either herbaria or pathological collections) can allow for them or 'discount' them. Just as an anatomist can discern, in a recent specimen of disease, the healthy structure, so, but often much more clearly, can the pathologist or any careful student discern in the prepared specimen the chief characteristics of the disease." * Colored drawings, casts, and models are of great value in supplementing original specimens, but they can not wholly replace them.

A good preparation, whether of normal or abnormal structure, but especially the latter, is valuable, not only for what we can see in it, but also for what we overlook or misinterpret, and which our successor may see, and see rightly. In this it is better than a mere description, yet the latter is equally necessary and much more easily preserved and made generally useful. Next to the preparation itself in accuracy and completeness of record is the photograph, and next to this is a good model, or a careful drawing.†

In medical and surgical matters, as in most other things, we habitually think in terms of vision as interpreted by touch. Hence, in part, the importance of the so-called object-teaching, and the fact that what the medical lecturer shows his class will usually be much better remembered and understood than what he says to it. And, while pictures and diagrams are of great assistance, they are by no means so instructive and suggestive as representations in three dimensions—i. e., models, if the thing itself is not available.

One of the most important sections of our museum is that devoted to microscopy, including normal and pathological histology and photomicrographic work. In the cabinets there are nearly 11,000 mounted specimens, illustrating almost every field of microscopical research. Many of these were made twenty years ago and more, and were mounted

by processes which have not given good results, so that Dr. Gray, who is in charge of this section, estimates that about 3,000 will be set aside as worthless; but the rest form a very valuable series to which additions are being constantly made, and materials for which we are specially anxious to obtain. In connection with this section a series of cultivations of chromogenic and pathogenic bacteria is kept up for museum exhibits, and also to illustrate methods of work.

While the great majority of the specimens in a medical museum have some relation to diagnosis, prognosis, or therapeutics, the number of those which are of direct interest to the so-called practical physician is not very great. It includes models and casts illustrating dermatology, morbid growths, the results of amputations, excisions, plastic operations, etc., and instruments, apparatus, dressings, etc., of all kinds. Here also may be classed hospital fittings and furniture, means of transportation for the sick and wounded, model cases of instruments, emergency chests, etc. Our medical museum has a fair beginning of a collection of this kind, including over a thousand specimens; but many more are needed to make it reasonably complete. If each medical man who devises a stethoscope, a pessary, a speculum, an ophthalmoscope, or an electro-therapeutic appliance with which he is well pleased would send a specimen to the collection, its increase would certainly be rapid, and it could always show the latest improvement.

An ideal medical museum should be very complete in the department of preventive medicine or hygiene. It is a wide field, covering, as it does, air, water, food, clothing, habitations, geology, meteorology, occupations, etc., in their relations to the production or prevention of disease, and thus far has had little place in medical museums, being taken up as a specialty in the half dozen museums of hygiene which now exist.

Our own National Museum of Hygiene is, as you know, under the direction of the Medical Department of the Navy. It is a very interesting collection of sanitary appliances of various kinds; but it is not well housed, it is much overcrowded, and its location is so inconvenient that it receives but few visitors, and, therefore, it has by no means the educational influence that it ought to have. It should be provided with ample quarters in the immediate vicinity of the National and of the Army Medical Museums, to both of which it would form a very desirable supplement. In our Medical Museum at present military hygiene only is illustrated, and this only in a few branches, such as hospitals, means of transportation of the wounded, etc. As regards *materia medica*, an exceedingly well arranged collection, including about five thousand specimens, has been formed in the National Museum, under the direction of the Surgeon-General of the Navy. The relations of *materia medica* to natural history, commerce, and the arts, which are subjects belonging especially to the National Museum, are as close to them as they are to medicine, and I am very glad that our national collection in this branch is where it is and under its present management. In the Medical Museum we have a collection showing what is supplied in the way of drugs, instruments, etc., to the medical department of our army, and, as opportunity offers, we shall

* "British Medical Journal," 1880, ii.

† To realize the value of a good drawing, one should consult the illustrations of the works of Vesalius, Eustachius, and other anatomists of the sixteenth and seventeenth centuries. The dissections and preparations which they made perished long ago. It is true that there is still in existence at Basle a skeleton prepared by Vesalius, and possibly a few other osteological specimens preserved by the older anatomists and pathologists may still be in existence; but, as a rule, to which there is hardly any exception, we must depend on the plates of these old folios to get at the true meaning of the text.

extend this to include the medical supplies of other armies or services.

The extent to and manner in which a medical museum should deal with anthropological and ethnological problems are not questions to be discussed in the abstract with advantage, since the answers must differ greatly according to circumstances. In our national museums the matter has been so arranged that all material relating to anthropometry, or to real or supposed structural differences in man according to race, are cared for in the Medical Museum, while specimens illustrating manners and customs, implements, weapons, clothing, pottery, etc., are taken charge of in the anthropological division of the national collection.

The Army Medical Museum contains what may seem a large amount of material relating to human osteology, and especially craniology, in its relations to North American ethnology, or the history of the development of different varieties of man on this continent; but it is not actually half large enough to permit of drawing definite scientific conclusions from it. The majority of the crania which it contains have been measured to a certain extent, and the results have been published; but many other measurements are desirable to permit of comparison with series taken elsewhere, and even measurements already made must be repeated by later and better methods. We have been trying some experiments with composite photography and superimposed contour tracings as a means of obtaining typical outlines and dimensions for race groups of crania, and these give promise of good results. If the collections of crania of North American Indians in Boston, New York, Philadelphia, and Washington could be brought together, a very much better average representation of the majority of tribes or groups would be obtained than can be furnished by either of these collections taken separately. By composite photography and tracings, combined with uniform methods of measurement, we can practically bring these collections together, and obtain results nearly as satisfactory as if we had them all in one room. We have also fitted up one large room with instruments and apparatus for anthropometry in its widest sense, including psychophysical investigation, and it is intended to make this a complete laboratory for illustration of methods of work.

In London arrangements have been made to have such an anthropometric laboratory in an outbuilding at the South Kensington Museum. The two things have no connection, and it seems to have been placed there because it would obtain more visitors desirous of being measured and tested than if placed anywhere else. In this laboratory, which is, I believe, essentially the same sort of institution as that arranged by Mr. Francis Galton at the Health Exhibition in 1884, and is planned by Mr. Galton, any person can have the regular series of measurements and tests made upon himself for a charge of six cents. There are difficulties in the way of making a charge for such measurements in a government establishment, and there are also difficulties in undertaking to do such work gratis, chiefly on account of the cost. It is, however, so desirable that it should be done, and the data derived from such observations, systematically carried on for a series of years, would be so valuable, not

only from a scientific point of view, but for practical purposes in connection with life-insurance interests, and very possibly with practical medicine, that we should endeavor to overcome these difficulties in some way, and I think it can be done sufficiently, at least, to stimulate private enterprise in this direction. It is possible that we may yet see in large cities establishments of this kind, directed by skilled and reputable physicians having the confidence of the profession, where not only normal but abnormal conditions can be determined; places where the secretions can be tested chemically and microscopically, ophthalmoscopic and endoscopic examinations of all kinds made, the mode of functioning of muscles and nerves determined, and an authoritative record of the results made for the use of the individual, as evidence of his condition, or for the information of his physician. It would require an already established reputation and much skill and tact on the part of the director of such a laboratory, with absolute refusal to give prescriptions or advice in any shape, to make it fully successful; but it may be done.

An important feature of our National Medical Museum should be to show methods of research and of instruction for the benefit of the investigators and teachers of the country. This includes instruments and apparatus, and, to a limited extent, illustrations of the modes of using them and of the results; it also includes diagrams, models, etc., used for illustrating lectures. For example, as soon as Koch's researches became known in this country, physicians, and especially medical teachers who visited the museum, asked if we could show them the apparatus used by Koch and Pasteur in bacteriological work, and eagerly examined the few specimens of cultivations on solid media which we were able to exhibit. The anatomist comes to the museum quite as much to see methods of mounting and preservation as to see the specimens themselves; the physiologist does not expect to see function directly exhibited, but he does hope to find information about kymographs and constant temperature apparatus, and he wants to see whether Kühne's artificial eye is so useful for teaching purposes that he ought to get one to illustrate his lectures.

Medical museums are not, as a rule, freely open to the public, nor are they collected or arranged with reference to interesting or instructing non-professional persons. The Medical Museum at Washington is the chief exception to this rule, and it is so because it was placed in Ford's Theatre, the scene of the assassination of President Lincoln. Many visitors to Washington, both men and women, wished to see this memorable spot, and, in doing so, necessarily went through the museum. This gradually led to the adjusting of the specimens exhibited with a view to the fact that they were to be seen by a number of non-professional persons of both sexes. Certain groups of specimens were put aside and not shown except to persons known to be physicians, while other groups were given prominent places because they interested the public, although not of great professional or scientific value.

On the other hand, the public has gradually become accustomed to consider the Army Medical Museum as one of the "sights" of Washington, to be visited by male and

female, old and young, and when a stranger comes to the city and inquires what he ought to see, this museum will probably be named to him next after the National Museum. Since the collection has been moved into the new building near that devoted to the National Museum, of which it may almost be said to form a part, the number of visitors has rather increased than diminished, and it has been found desirable to consider with care some problems which this state of things has forced on the attention of the curator. That educated men and women should have some curiosity as to the structure of their own bodies, the functions of certain organs, the arrangement of parts in certain localities where they have felt pain or discomfort, or the changes which have caused death in relatives or friends, is perfectly natural and proper, and there is no objection to gratifying this curiosity to a very considerable extent. The wonder to me is, not that boys and girls, youths and maidens, men and women, like to see specimens which will teach them something on these points; but that so many of them remain ignorant of and careless about the wonderful mechanism of their own bodies. Now, what are the specimens in a medical museum which most interest the public, and in what direction is it expedient to try to direct this interest and to do educational work by means of the exhibits? In the first place, the majority of men and women, when at leisure and trying to amuse themselves, or to pass away time, prefer things that appeal more or less to the emotions, rather than those which appeal only to the intellectual faculties. The skeleton of a hand will be barely glanced at; but if it were known that it had been the hand of a great general, a great writer, or a great criminal, it would be a specimen that almost every one who visits the museum would wish to see. Usually it is not expedient, nor even possible, to furnish the personal data which would arouse this purely emotional interest.

When people come to the Army Medical Museum and ask where General Smith's brain, or Judge Brown's heart, or the Hon. Mr. Jones's larynx, or Guiteau's skeleton is, and are informed by the attendant that he does not know where it is, and is not even certain that it is in the collection, there are some expressions of disappointment, it is true; and sometimes the curator is appealed to as a last resource; but a few words of explanation as to what the main purpose of the museum is, and the suggestion that one would not like to have his or her father's skull displayed and labeled with his name, no matter how great or how infamous he may have been, is usually quite sufficient to satisfy the seeker.

This addition of interest to a specimen by calling attention to certain sentimental or historical associations connected with it is not only proper but desirable for all specimens not derived from the human body; but for these last the rule should be to wait a hundred years before publicly labeling them with the names of the persons from whom they are derived.

For scientific and professional purposes we, of course, want a history of the specimen which will, as far as possible, give the data connected with its peculiarities, and among these may be race, occupation, and even name,

though the emotional element does not enter into it at all. If, for example, we had before us a specimen of cancer of the stomach, it might be of great interest, taken in connection with the symptoms, or in regard to the question as to whether pylorotomy or gastro-duodenostomy would have been justifiable; but from a scientific point of view it would add little to the value of the specimen to know that it was from the body of Napoleon and not from an unknown soldier.

To return to our question as to what interests the public. Of specimens illustrating the anatomy and physiology of man, no doubt the most interesting to non-medical persons are those connected with reproduction. In the hall of the Army Medical Museum, which is open to the public, we do not place specimens illustrating specially the anatomy of the genital organs; but we do exhibit a series illustrating embryology, and especially the development and growth of the human embryo, and there is no case in the museum before which the average visitor will linger longer. The specimens are clearly labeled; a lady may go there alone, and, unnoticed, may at her leisure learn something about her own peculiar function, and the provisions for the life of the new organism; and I think she will hardly find the same facilities for this self-study anywhere else in the world. I do not mean by this that other museums may not have larger and more instructive collections of such specimens, but that they are not available for the information of modest, respectable non-professional women.

In what has been said thus far, it is chiefly the utilitarian point of view that has been made use of; but this is by no means the whole matter. No art and no branch of science should form the sole end and object of a well-balanced life, and there are objects in every large museum which are of great interest, though they appeal rather to the emotional than the intellectual faculties of the spectator. There are many specimens in the Army Medical Museum which I would rather see removed than to lose John Hunter's lancet, which has no scientific interest whatever. So also its collection of between three and four hundred medals and tokens relating to medical institutions or distinguished medical men, or commemorating outbreaks of pestilence or the victories of preventive medicine, is one which should be made complete and fully displayed, though it would not be easy to demonstrate its utility to any one unless he were interested in the history of the struggles and triumphs of the medical profession.

The objects of a medical museum are to preserve, to diffuse, and to increase knowledge. Its conservative function is to form a permanent record of what has been demonstrated and to fix the meaning of terms. Even in my brief experience of thirty years the terminology of anatomy, physiology, pathology, chemistry, and most of the specialties has greatly changed, and this not only by addition of new terms, but by the dropping of old ones. To get useful results from the older literature we must know the precise significance of the old words, and, in some cases, the best way to learn this is to examine the specimens prepared by those who used such terms in their descriptions. The specimens in our museum which came from the collections of Professor

William Gibson and Dr. Frank Hastings Hamilton are especially valuable, because they were the basis of practical teachings, and should be examined by any one criticising these teachings.

A large proportion of the pathological specimens in this museum illustrate conditions which now rarely occur, forming a group which it is safe to predict will never be duplicated. It is not only that they were gathered during a great war, but that they illustrate the results obtained when antiseptic surgery, as now understood and practiced, was unknown. Never again, I hope, will there be brought together such a collection of the effects of pyogenic micro-organisms on gunshot wounds, especially of bone, as may be seen in its cases.

The museum also preserves, for future investigations, objects whose nature or relations are not understood at the time when they are received, and which occur so rarely that the means of studying them by comparison can only be obtained through such preservation.

Upon the function of a museum as a diffuser of knowledge, as a means of education, it is needless to dwell. That it should also strive to increase knowledge is equally certain. This is to be effected by study and comparison of its materials. The results of such study and comparison of a part of the Army Medical Museum collection have appeared in the volumes of the "Medical and Surgical History of the War." Another part will, I hope, soon be utilized in a study of its collection of human skeletons and crania which has been commenced by Dr. Matthews, of the army. But a considerable part is as yet only in the stage of agglomeration, and our present business is to collect and preserve, leaving to the future its full utilization.

A medical museum is really used, for purposes of study, by very few persons; but through the teaching of those few its lessons are made known to the whole profession. American physicians in investigating a subject do not, as a rule, think of inquiring as to what museums can show with regard to it, simply because they have not had convenient access to large collections and are not accustomed to make use of them. Thirty years ago we were in much the same situation in respect to medical literature; but as the libraries have grown, desire for bibliographical research has grown also, and I think that in like manner when we have secured a comprehensive national medical museum it will not only be made use of, but will give a powerful stimulus to the formation and progress of other more special collections elsewhere.

What should be the relation of this central national collection to those formed in different parts of the country, either in connection with medical schools or with museums of broader scope? Certainly they should help one another, and this can be done in many ways. I do not in the least object to a generous rivalry to do the best work, to have the most instructive and the most artistic preparations. That is a good thing. But I would say to the anatomist of a school, When you have made a preparation which is noteworthy, offer to make a copy for the national collection, where it will be seen by the anatomists of all schools and of all countries. To the pathologist of a medical school

I would say, After you have secured type specimens for your own collection, put aside other good specimens for the National Medical Museum, which will furnish you materials for the purpose.

On the other hand, the collections of the National Museum are available for study by any proper person, and its duplicates should be used to aid other museums which may be in special need of them.

In common with several of the largest and most important medical museums, more especially those of the Royal College of Surgeons and of the Faculty of Medicine of Paris, the Army Medical Museum has the advantage of being closely associated with a large medical library which is in the same building, and at present under the same direction. The increased utility and attractiveness which this gives to both library and museum is very decided.

It is true that in some other institutions similarly arranged there has been some grumbling as to the proportion of funds allowed to the museum and to the library respectively, the museum enthusiast alleging that the librarian would rather have one rare old pamphlet than half a dozen entirely new vertebrates, while the bibliophile is sure that the demand of the profession for access to a full supply of books and journals is much greater than that for access to specimens. I can only say, from my own experience, that one who has charge of a library only will probably not hesitate to take museum funds, if he can get hold of them, to buy books; but that when one person is responsible for both he will endeavor to give each its fair share of the resources at his command.

If we had to choose between having a great national medical library and a great national medical museum, no doubt most of us would take the library, because it would be of more immediate use to us; but no such unpleasant alternative is forced on us. There is no reason why we should not have both, and we must have both.*

I have time for only a very condensed statement of the wants of our National Medical Museum. In the first place, it needs the intelligent interest and friendship of the medical profession of this country. To a very considerable extent it has had this; were it otherwise, it would not be what it is, nor where it is. But it needs more of it, and it can never have too much. Every medical man in this country should help a little, and provide for the perpetuation of his name as that of a physician interested in the progress of the profession by sending at least one specimen to it. It is omnivorous in its demands for material, as will be seen by the circular which it has recently issued. But I will name as special wants human embryos, especially those of a very early age; monstrosities and malformations of all kinds in man or in the lower animals; results of old injuries—such as fractures or dislocations—or of surgical operations—such as excisions, stumps, etc.; injuries and diseases of the eye, ear, and nose; new growths of all kinds; diseases of the brain and spinal cord; and specimens illustrat-

* "There are few things in relation to our science of which I am more sure than this, that every possible method of studying it should be by all possible means promoted."—Sir James Paget, in "*Lancet*," January 22, 1887, p. 159.

ing the condition of bones, joints, brain, larynx, and other organs in extreme old age.

In the second place, it needs a regular supply of funds from the General Government. To form and keep in proper condition such a medical museum as this should be is a more difficult and expensive matter than those not acquainted with such work would suppose, and the gifts of specimens from the profession must be supplemented by ample means for the preparation, preservation, and proper display of these specimens, and also for the purchase of apparatus and typical specimens of foreign work, in order that the museum may always be able to show the latest state of knowledge and the best ways of doing things.

The annual appropriation for the museum at present is \$5,000. This is sufficient, except that the printing of the catalogue, of which I shall speak presently, must be an extra charge; but the medical profession should see to it that the amount is not reduced in the rhythmic spasms of partial economy with which some of our statesmen are afflicted.

The third need of the museum is of a series of the right kind of descriptions of its specimens, given on labels and in a catalogue. Unaided by such descriptions, it has for each man that which he can see in it, and no more. One man will see nothing but an old piece of bone, a shapeless mass of tissue bleached by alcohol, a case of old dingy brass instruments. Another will see in the same things a rare joint atrophy, implying curious abnormal nerve influence; a leprous nodule, whose history, if we knew it, would reach back through the lazarettoes of the middle ages to the far East, and whose bacilli may be the lineal descendants of those that vexed Naaman the Syrian; a case of microscopes illustrating the development of that instrument from the first rough iron tube of the spectacle-maker of Nuremberg to the delicate and complicated instrument through which we now peer curiously into that world which lies within the world of unassisted vision. By our labels and catalogues we must tell men what to see; but to do this we must first see ourselves. The aphorism that a first-class museum would consist of a series of satisfactory labels with specimens attached means a good deal. Something has been done in this direction, as you will see on inspection of the cases; but I often wonder what sort of labels a man who has spent years in investigating the normal and abnormal structure and relations of one organ would write for our specimen of that organ. Such help as this we need; kindly, truthful criticism, the pointing out of errors and of new points of view for this mass of material.

We also need a series of printed catalogues. One of these should be in the form of compact hand-books relating to particular sections of the collection, and intended partly for the use of visitors while in the museum and partly as a ready means of letting distant friends know what material it most needs in different departments. It should also print a complete illustrated catalogue of the whole collection for the use of the investigators and teachers of the profession. Congress has been requested to grant authority for the printing of such a catalogue by the Government Printer. The material for it is nearly ready, and it would make three

volumes each of the size of one of the volumes of "The Medical and Surgical History of the War of the Rebellion." *

The subject of museum organization and management is one of those with regard to which it has been said that a man who is interested in it passes through three successive states of mind, viz.: First, he thinks he knows almost all about it, except a few minor points of detail which he is going to look up. Second, he feels that he will never know anything about it. Third, he believes he knows a little, and hopes by experience and study to know more.

The museum needs earnest and well-trained students to work up its collections so as to advance knowledge, and, at the same time, to display the specimens properly so as to make them most instructive. To all such students we shall endeavor to afford opportunities for this work. Precisely how this is to be effected is not yet clear, but there is abundance to be done, and there are quite a number of men coming on the stage who want to do such work for its own sake, because it gives them pleasure. Sooner or later we shall have half a dozen or more of specially trained men busy in the laboratories and work-rooms of the museum, each engaged on his own problems, and the whole for the common good.

The medical museum hints at matters which lie outside the scope of known physical and chemical laws. Physicians have not, as a rule, been very virulent theologians; their studies and their daily work tend to give them compensation of bias in this particular, and therefore, in this age of transition in beliefs, it is not so true of them as of others, that "the old hopes have grown weak, the old fears dim, the old faiths numb." In our medical museum yonder may be found abundant illustrations of the results of physical and chemical actions and reactions upon what was once living matter, and was connected with centers of consciousness, of intellect, of emotions which imply something more than ordinary protoplasm or mere metabolism. It brings together strange company. The men who dwelt on the sides of the Andes in the old Aztec days, the men who built cities in the Gila Valley centuries before the days of Columbus, the Esquimaux, and the Indian of the plains, black and white, red and yellow, all sorts and conditions of men are represented in those bony caskets which once held their centers of life and thought, but now are reckoned only as so many crania in the museum catalogue. The great majority of the pathological specimens imply either suffer-

* Some large and valuable collections have no formal catalogues; but the results have been published in essays, monographs, or textbooks by those who have formed them. This is the rule as regards the collections at the various anatomical and pathological institutes and laboratories of continental schools. I have examined most of the published catalogues of medical museums, partly to obtain information as to the best methods of doing such work, and partly to ascertain what might be worth indexing in them. Some of them are mere lists of specimens, of no value except for use in the museum itself. A few give accounts of many specimens, especially in pathology, which make them valuable works of reference apart from the collections themselves. To what extent such detailed descriptions should be made for publication, including brief histories of cases, depends partly on the character of the specimens, partly on the skill of the describer, and partly on whether illustrations are to be used or not.

ing or death, or both, of the individual from whence they came. Some of them are the results of intemperance, of lust, of folly, and crime; but some are the results of unselfish sacrifice for the good of others—true flowers of blood and pain. A large group of them form one of the relics of an acute paroxysm of disease of a great nation. The old pensioner likes to keep the battered ball which crippled him, and so these relics have an interest beyond that which is purely professional. That the nation is not crippled by its loss takes nothing from their interest, and the fact that we are physicians does not imply that we look upon them from a medical or scientific standpoint only. Those of the combatants who survive are now better friends than ever, and the museum specimens, coming as they do from the sick and wounded of both armies, and contributed by both Union and Confederate surgeons, enforce the lesson of the unity of the profession and of its interests, as well as that of our country.

Our museum, like the library with which it is associated, includes all the specialties. No physician is so learned or skillful that he can find no instruction there, and no one is so ignorant that he can not comprehend some of the lessons which it teaches. Taken together, these institutions should contribute in no small degree to our national prestige, for which eminence in scientific work and teaching is an essential element, and if it is remembered that they are only twenty-five years old, and that during that period we have been making medical history at a tremendous rate, surely some incompleteness and crudeness may well be excused or overlooked.

Speaking in behalf of the Army Medical Department, and for the dead as well as for the living who have been charged with this work, I can truly say that we have been very proud of our charge, and that we have done our best, each according to his capacity and opportunities, to make the museum and library such as a great profession and a great nation have a right to demand.

Original Communications.

RECENT EXPERIENCE IN LITHOLAPAXY IN MALE CHILDREN.*

By D. F. KEEGAN, M. D.,
SURGEON-MAJOR, INDORE, CENTRAL INDIA.

WHEN your distinguished president did me the honor of inviting me to be present at the meetings of your section as a member of the Congress of American Physicians and Surgeons, he at the same time conferred on me a still greater honor by requesting me, in case I should not be able to take part in your discussions, to send a short note on my latest experience in regard to litholapaxy in male children. Unfortunately, I am unable to be present at your

meetings, and so I gladly seize the opportunity so kindly offered, and send a short note on this subject.

Your president, in sending me the invitation, very justly remarked that in the birthplace of litholapaxy it was but fitting that such a paper should appear. As America is the birthplace of litholapaxy, so I may maintain that India is the land of its adoption, for in no quarter of the globe has Bigelow's successful revolution in the treatment of stone been more cordially welcomed or more ungrudgingly recognized than in England's great dependency. Freyer and I, in this country, have pushed litholapaxy to its furthest limits in both young and old, and the more we have practiced this operation, the better we like it. And now briefly to relate my latest experience of it in its application to the treatment of stone in male children.

I will not dwell on the many objections raised against the operation of litholapaxy in male children. Accomplished facts have demonstrated how purely theoretical were these objections. I will therefore merely direct your attention to the accompanying table, which embodies the principal features of interest connected with one unbroken series of one hundred and fourteen litholapaxies performed on male children and boys at the Indore Charitable Hospital, Central India, between December, 1881, when I first started this operation, and June of the present year. A glance at this table shows that litholapaxy was tried very tentatively at first among this class of patients, and, as time went on and we had gained more experience, the range of the operation was much enlarged, for within the last fifteen months, out of thirty-five male children and boys admitted into the Indore Hospital suffering from stone, I have treated thirty-three by litholapaxy. This table proves what I have frequently stated elsewhere—namely, that the caliber of the urethra in male children is, as a rule, much larger than what surgeons in former days believed was the case. It also shows that the average number of days spent in hospital by male children and boys after litholapaxy was 5.7, and that the average weight of stones removed was 95.05 grains. The percentage of mortality which followed litholapaxy among these one hundred and fourteen patients was 3.5. But I may justly state that this rate of mortality should be halved, for serial No. 11 was really not one of litholapaxy, but one of lithotripsy at three sittings, and serial No. 69 was hopeless from the beginning, the child being the subject of very advanced disease of the kidneys, and the operation only being undertaken at the urgent request of his parents that something should be done to relieve him from his sufferings.

The accompanying table also proves what some surgeons do not as yet believe—namely, that Bigelow's operation is capable of dealing successfully with very large and hard stones occurring in boys; *vide*, for example, serial Nos. 44, 46, 96, and 108. I would draw especial attention to the consideration of serial No. 108, because through the kindness of Surgeon-Major Warden, professor of chemistry in the Medical College, Calcutta, I am in a position to give the exact chemical composition of the *débris* of this stone, which weighed 606 grains. A glance at the table appended shows that I have within the last year disposed

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting, September 19, 1888.

TABLE SHOWING PARTICULARS OF 114 LITHOLAPAXY OPERATIONS PERFORMED ON BOYS AND MALE CHILDREN AT THE INDORE CHARITABLE HOSPITAL, CENTRAL INDIA, FROM DECEMBER, 1881, TO JUNE, 1888.

Serial number.	Age.	Caste.	Date of operation.	Time occupied by operation, in minutes.	No. of lithotrite used.	No. of catheter used.	No. of times lithotrite was introduced.	No. of sittings.	Composition of stone.	Duration of disease, in months.	Weight of stone in grains.	No. of days in hospital after operation.	Result.	Name of operator.
1	5	H	Dec. 15, '81.	No record	10	9	No record	1	No record.	5	*	25	Success	Dr. Keegan.
2	8	H	Apr. 21, '82.	"	10	9	"	1	No record.	15	"	14	"	"
3	7	M	Oct. 11, '82.	"	10	9	"	1	No record.	No record	30	9	"	"
4	8	H	Feb. 7, '83.	45	10	9	"	1	Phosphatic.	"	15	2	"	"
5	24	H	Mch. 16, '83.	No record	7	9	1	1	No record.	"	10	3	"	"
6	5	M	June 28, '83.	35	10	9	No record	1	Uric acid.	"	17	12	"	"
7	4	H	Sept. 26, '83.	30	10	9	"	1	Uric acid.	"	55	3	"	"
8	7	H	Sept. 27, '83.	No record	10	9	"	1	Uric acid.	"	5	3	"	"
9	8	H	Oct. 9, '83.	20	10	9	"	1	Uric acid.	"	16	10	"	"
10	5	H	Oct. 9, '83.	70	10	9	"	1	Uric acid.	"	84	9	"	"
11	4	H	Dec. 15, '83.	No record	7 & 10	9	"	3	Phosphates growing round tilli stalk.†	10	35	16	Died.	Mr. Gunput-singh & Dr. Keegan.
12	10	H	Dec. 17, '83.	"	10	9	"	1	Phosphates.	No record	200	9	Success	Mr. Gunput-singh.
13	5	H	Dec. 29, '83.	60	10	9	"	1	Uric acid.	6	158	11	"	"
14	3	H	Jan. 26, '84.	38	10	9	"	1	Uric acid.	12	104	7	"	Dr. Keegan.
15	5	H	Feb. 16, '84.	30	10	9	"	1	Urate of ammonia and uric acid.	6	51	12	"	"
16	12	H	Mch. 3, '84.	55	10	9	"	1	Earthy and triple phosphates.	24	240	11	"	"
17	2	H	Mch. 10, '84.	4	7	9	"	1	Uric acid.	4 days	7	2	"	"
18	14	H	Mch. 27, '84.	32	7	7	"	1	Uric acid.	4	18	4	"	"
19	7	M	May 12, '84.	60	10	9 & 12	5	1	Phosphates.	24	160	15	"	"
20	34	H	May 26, '84.	67	7 & 10	9	5	1	Phosphatic.	12	75	8	"	"
21	24	H	May 29, '84.	70	7	7	5	1	Uric acid.	24	24	3	"	"
22	6	M	July 3, '84.	60	10	9 & 11	6	1	Uric acid and oxalate of lime covering.	48	210	8	"	"
23	4	H	Aug. 22, '84.	56	8	7 & 9	4	1	Uric acid.	10	38	13	"	"
24	11	H	Nov. 20, '84.	112	8	12	7	1	Oxalate of lime.	12	308	14	"	"
25	2	M	Dec. 10, '84.	20	7	7	3	1	Lithic acid.	12 days.	5	10	"	"
26	8	H	Jan. 30, '85.	104	8	9	9	1	Phosphatic.	60	285	5	"	"
27	10	H	Jan. 30, '85.	85	8	9	7	1	Phosphates and uric acid.	24	170	6	"	"
28	9	H	Mch. 19, '85.	78	8	7 & 9	6	1	Uric acid.	12	90	5	"	"
29	10	H	Mch. 27, '85.	10	8	9	1	1	Oxalate of lime.	24	43	2	"	"
30	5	H	Apr. 5, '85.	58	8	9	6	1	Phosphate of lime.	6	140	4	"	"
31	7	H	Apr. 11, '85.	31	8	9	2	1	Mulberry with slight covering of phosphates.	48	57	4	"	"
32	11	H	Apr. 13, '85.	67	8 & 10	12	6	1	Pure mulberry.	48	226	9	"	"
33	10	H	Apr. 28, '85.	90	8	9	6	1	Oxalate of lime.	24	200	5	"	"
34	7	H	Apr. 30, '85.	43	8	9	4	1	Oxalate of lime.	36	140	3	"	"
35	10	H	May 2, '85.	80	7 & 8	7 & 9	8	1	Phosphatic and uric.	4	91	11	"	"
36	4	H	May 7, '85.	41	7 & 8	7	4	1	Mulberry with phosphatic covering.	9	27	3	"	"
37	10	H	May 27, '85.	94	8	9	6	1	Urates and phosphates.	72	360	8	"	"
38	24	H	June 9, '85.	17	8	7	4	1	Uric acid.	3	11	4	"	"
39	24	M	July 9, '85.	31	8	7	5	1	Uric acid.	24	32	3	"	"
40	8	H	Aug. 1, '85.	57	8	7 & 9	5	1	Oxalate of lime.	No record	28	4	"	"
41	2	H	Aug. 16, '85.	21	7	7	2	1	Uric acid.	3	8	5	"	"
42	5	H	Sept. 9, '85.	62	7	7	9	1	Uric acid and phosphates.	6	41	4	"	Surg.-Maj. Caldecott.
43	3	H	Sept. 13, '85.	18	8	7	3	1	Phosphates with nucleus of oxalate of lime.	5	12	3	"	"
44	94	H	Sept. 19, '85.	182	11 & 15	13 & 14	26	1	Uric acid, nucleus oxalate of lime with phosphatic covering.	24	700	10	"	"
45	8	H	Sept. 29, '85.	36	10	11	6	1	Uric acid and phosphates.	12	176	8	"	"
46	12	H	Sept. 30, '85.	62	11 & 14	12 & 13	9	1	Oxalate of lime.	12	344	4	"	"
47	8	H	Nov. 1, '85.	30	7 & 8	7 & 9	5	1	Phosphates.	24	72	9	"	"
48	5	H	Nov. 4, '85.	24	7 & 8	7 & 9	4	1	Uric acid.	12	32	10	"	"
49	13	H	Nov. 8, '85.	48	11	12	7	1	Uric acid and oxalate of lime.	48	272	12	"	"
50	24	M	Nov. 11, '85.	30	7	7	4	1	Uric acid with slight phosphatic covering.	3	16	4	"	Dr. Keegan.
51	6	H	Nov. 17, '85.	12	8	8	2	1	Mulberry and uric acid with slight phosphates.	6	23	3	"	"
52	44	H	Dec. 16, '85.	45	8	8 & 10	4	1	Uric acid.	10	118	5	"	"
53	34	H	Feb. 6, '86.	37	8	8 & 9	4	1	Uric acid.	12	70	8	"	"
54	14	H	Feb. 12, '86.	60	8 & 11	9 & 10	6	1	Fawn-colored uric acid.	24	248	11	"	"
55	34	H	Feb. 23, '86.	10	8	7	2	1	Oxalate of lime.	18	19	4	"	"
56	14	H	Feb. 27, '86.	10	8	9	1	1	Phosphates.	4	19	2	"	"
57	6	H	Feb. 28, '86.	56	8	8 & 9	5	1	Uric acid and oxalate of lime nucleus.	6	105	9	"	"
58	4	H	Mch. 25, '86.	39	7	7	6	1	Uric acid and phosphates.	8 days.	14	5	"	"
59	34	M	Apr. 3, '86.	16	7-5	8	2	1	Soft pale uric acid.	24	36	4	"	Surg.-Maj. Caldecott.
60	24	H	May 6, '86.	23	7	7	9	1	Uric acid.	6	19	2	"	"
61	10	H	May 11, '86.	79	10 & 8	9 & 8	11	1	Uric acid.	60	143	6	"	"
62	24	H	May 13, '86.	21	7-5	8	4	1	Soft uric acid and phosphates.	12	79	7	"	"
63	10	H	May 20, '86.	29	8 & 7-5	8 & 9	4	1	Oxalate of lime.	60	49	2	"	"
64	8	H	June 8, '86.	21	7-5	9	4	1	Uric acid with very thin covering of phosphates.	24	100	2	"	"
65	3	H	July 12, '86.	24	7 & 7-5	7 & 8	3	1	Uric acid.	4	40	14	"	"
66	4	M	July 18, '86.	8	7-5	10	1	1	Uric acid.	3	20	2	"	"
67	6	H	July 19, '86.	28	7-5	9	5	1	Uric acid.	6	47	2	"	"
68	5	H	Aug. 6, '86.	9	7-5	8	2	1	Uric acid (brick-dust colored).	24	16	1	Died.†	"
69	24	H	Aug. 10, '86.	14	7-5	8	3	1	Uric acid.	9	40	14	Died.	"
70	2	H	Sept. 9, '86.	6	7	7	2	1	Uric acid.	4	3	8	Success	"
71	4	H	Sept. 21, '86.	17	7-5	8	2	1	Uric acid.	4	82	2	"	Mr. Gunput-singh.
72	5	H	Sept. 24, '86.	20	7-5	8	3	1	Uric acid.	12	110	3	"	Surg.-Maj. Caldecott.
73	6	H	Sept. 30, '86.	26	7-5	8	5	1	Uric acid.	48	53	4	"	"
74	5	H	Oct. 11, '86.	4	7	7	1	1	Uric acid.	1	1	6	"	"
75	34	H	Nov. 29, '86.	8	7-5	7	1	1	Urates and uric acid.	6	16	3	"	"
76	7	H	Jan. 3, '87.	29	7-5	8	5	1	Uric acid with nucleus of oxalate of lime.	18	140	14	"	"
77	5	H	Jan. 15, '87.	5	7-5	8	1	1	Uric acid.	36	25	6	"	"
78	34	M	Jan. 26, '87.	8	7-5	7	1	1	Uric acid.	12	10	3	"	"
79	8	H	Feb. 4, '87.	29	7-5	8	5	1	Uric acid.	6	66	3	"	"
80	2	H	Feb. 9, '87.	3	7-5	6	1	1	Uric acid.	1	5	2	"	Mr. Gunput-singh.
81	10	H	Mch. 7, '87.	62	10	10	9	1	Uric acid with thick covering of phosphates.	72	296	5	"	Surg.-Maj. Caldecott.
82	9	H	Apr. 4, '87.	16	7	8 & 10	2	1	Triple phosphates.	60	8	6	"	Dr. Keegan.
83	6	H	May 27, '87.	33	7	7	5	1	Uric acid and phosphates.	24	54	14	"	"
84	3	H	June 3, '87.	75	7	7 & 8	6	1	Uric acid.	6	70	6	Died.	"
85	34	H	June 18, '87.	10	7	8	1	1	Uric acid and phosphates.	15	50	2	Success	"
86	4	M	July 15, '87.	21	7	7	2	1	Oxalate of lime and phosphates.	6	25	3	"	"
87	74	H	July 26, '87.	10	7	7 & 8	3	1	Uric acid.	10 days.	2	2	"	"
88	11	H	Aug. 10, '87.	20	7 & 9-5	10	3	1	Oxalate of lime.	72	32	3	"	"
89	5	H	Aug. 14, '87.	52	7	8	6	1	Oxalate of lime.	24	78	4	"	"

* No record.

† Extensive disease of left kidney.

† Didymia angiospermis Schreb-gen, N. 1048, is annual, and in good soil grows generally to about three or four feet high.

TABLE SHOWING PARTICULARS OF 114 LITHOLAPAXY OPERATIONS.—*Continued.*

Serial number.	Age.	Case.	Date of operation.	Time occupied by operation, in minutes.	No. of lithotrite used.	No. of catheter used.	No. of times lithotrite was introduced.	No. of sittings.	Composition of stone.	Duration of disease, in months.	Weight of stone in grains.	No. of days in hospital after operation.	Result.	Name of operator.
90	4	H	Aug. 22, '87.	27	6	8	2	1	Nucleus oxalate of lime, with thick covering of phosphates.	5	26	2	Success	Dr. Keegan.
91	8	H	Sept. 8, '87.	45	9.5 & 7	10	4	1	Oxalate of lime.	18	185	4	"	"
92	6	H	Oct. 19, '87.	34	7.5	8	4	1	Mixed uric acid and oxalate of lime.	24	85	3	"	"
93	34	M	Nov. 1, '87.	55	9.5, 7.5, & 6	8 & 9	4	1	Oxalate of lime with very thin covering of phosphates.	6	168	3	"	"
94	10	H	Nov. 28, '87.	47	7 & 6	10	5	1	Phosphates with a very small nucleus of oxalate of lime.	1	275	3	"	"
95	10	H	Nov. 29, '87.	9	6	8	2	1	Oxalate of lime.	72	10	3	"	"
96	9	H	Nov. 29, '87.	66	7.5 & 6	8 & 7	5	1	Oxalate of lime and uric acid mixed with some phosphates.	72	535	3	"	"
97	24	H	Dec. 18, '87.	25	6	6	3	4	Mixed lithic acid and urate of ammonia.	9	10	4	"	"
98	8	H	Dec. 22, '87.	4	6	7	1	1	Oxalate of lime.	2	4	3	"	"
99	34	M	Feb. 14, '88.	14	6	7	2	1	Oxalate of lime.	12	30	3	"	"
100	5	H	Feb. 25, '88.	38	6, 7, & 7.5	7 & 8	5	1	Principally oxalate of lime with a very small quantity of phosphate of lime.	14	130	3	"	"
101	6	H	Mch. 4, '88.	8	6	8	1	1	Urate of ammonia and phosphates.	24	20	2	"	"
102	34	M	Mch. 16, '88.	14	6	6	3	1	Uric acid, principally with some admixture of oxalate of lime.	4	33	4	"	"
103	3	M	Apr. 14, '88.	19	6	8	2	1	Uric acid.	24	49	2	"	"
104	3	H	Apr. 23, '88.	9	6	7	2	1	Uric acid.	14	5	2	"	"
105	10	H	Apr. 28, '88.	86	6	6 & 7	7	1	Phosphatic, with a nucleus of oxalate of lime.	12	122	6	"	"
106	8	H	Apr. 29, '88.	40	6	7	4	1	Phosphatic.	18	72	2	"	"
107	9	H	Apr. 30, '88.	50	7 & 6	8	5	1	Oxalate of lime.	24	186	3	"	"
108	13	H	May 20, '88.	100	10.5 & 7.5	10	7	1	Uric acid with coloring matter, 48.48, oxalate of lime, 51.52.	Unknown	606	8	"	"
109	34	H	June 3, '88.	29	6	6, 7, & 8	3	1	Uric acid and oxalate of lime.	9	90	5	"	"
110	4	H	June 10, '88.	33	6	6 & 7	4	1	Principally phosphatic.	24	78	4	"	"
111	6	H	June 13, '88.	6	6	6 & 7	2	1	Oxalate of lime.	Unknown	3	1	"	"
112	11	M	June 15, '88.	14	6	10 & 8	2	1	Oxalate of lime.	12	28	5	"	"
113	54	H	June 16, '88.	24	6	7 & 6	4	1	Uric acid.	12	30	3	"	"
114	8	H	June 19, '88.	35	6	7 & 8	4	1	Mixed uric acid and oxalate of lime, with covering of phosphates.	12	87	2	"	"

Average age of boys operated on, 6.26 years.
Average weight of stone removed, 95.05 grains.

Average number of days spent in hospital after operation, 5.70.
Percentage of mortality following operation, 3.5.

of several stones in male children and boys by means of a No. 6 lithotrite (English scale). This lithotrite, which is fully fenestrated, is 5 in the stem and 6 in the angle, and was constructed for me by Messrs. Weiss & Son, London. I use only fully fenestrated lithotrites in performing litholapaxy in male children and boys, for I consider the use of partially fenestrated or unfenestrated lithotrites in dealing with stones in male children as absolutely dangerous. Indeed, for some years I have discarded the use of partially fenestrated lithotrites in performing litholapaxy in adult males, and, if I could, I would destroy all the flat-bladed, unfenestrated lithotrites that have ever been constructed. Any one who wishes to give the operation of litholapaxy in male children a fair trial must provide himself with a complete set of fully fenestrated lithotrites, beginning at No. 6 (English scale) in the angle and running up to No. 10 or No. 11.

A glance at serial No. 108 in the table appended shows that I successfully disposed of this stone, which weighed 606 grains, by means of a No. 10½ fully fenestrated lithotrite.

The advantages which litholapaxy possesses over its two rivals, suprapubic and lateral lithotomy, when dealing with stones in male children, are chiefly two—namely, rapidity of cure and avoidance of the dangers inseparable from all cutting operations. Are those advantages counterbalanced by a more frequent recurrence of stone after litholapaxy than that which follows suprapubic or lateral lithotomy? I do not think so, for out of 114 male children and boys on whom litholapaxy was performed at the Indore Hospital between December, 1881, and June, 1888, not one has re-

turned suffering from stone for the second time, and I feel quite certain that had any one of them been again troubled with stone he would have sought readmission to this hospital. Time and well-weighed statistics, however, can alone settle this important point, and in the mean time I give it as my opinion that it will be found that stone does not recur with greater frequency after a well-performed litholapaxy in boys than it does after suprapubic or lateral lithotomy.

Time presses, and I will not therefore discuss the relative merits of litholapaxy, lateral lithotomy, and suprapubic cystotomy when performed for the removal of small stones from the bladders of male children. But, as one who may claim some right to speak on this subject, I give it as my opinion that the operation of suprapubic cystotomy will never become a popular one among surgeons in India when dealing with small stones in male children and boys.

Freyer, in this country, has shown, by an unbroken series of 164 successful lateral lithotomies performed in boys and youths, what brilliant results can be achieved by this operation when skillfully performed, and as the period of recovery after suprapubic cystotomy is never likely to be much less than that which follows a lateral lithotomy, and as its percentage of success can never surpass that which follows a well-performed lateral lithotomy in boys, it can never become popular, in this country, in dealing with stones occurring among this class of patients. I have not the slightest doubt in my own mind that, in India at any rate, where surgeons enjoy such unrivaled opportunities of becoming practically familiar with the use of the lithotrite, the future operation for the vast majority of stones occurring in

male children and boys will be litholapaxy. Among this class of patients Bigelow's operation will be supplemented by lateral lithotomy for encysted stones or for stones occurring in sacculated bladders accompanied by extremely fetid urine, and where it is considered wise that the bladder should be well drained. Suprapubic cystotomy will be reserved for very large or very hard stones which may defy the powers of the lithotrite, and which it may be considered are too large to be extracted by the forceps through the perinæum. Speaking for myself, I can only say that with my present experience I should not feel justified in performing lateral or suprapubic cystotomy for the removal of any uncomplicated stone from a boy's bladder which I had good reason to think I could dispose of by litholapaxy.

And now, gentlemen, as the spokesman of my professional brethren of the Indian Medical Service practicing in this country, I gladly seize this opportunity, so kindly offered me by your president, of expressing our unbounded admiration of the services rendered to suffering humanity by your illustrious countryman Bigelow. He indeed, by his successful revolution in the treatment of stone, has proved himself a true benefactor to thousands of suffering natives of this country, for in India we deal with cases of calculi by the thousand.

Bigelow has solved a problem which has exercised the keenest surgical intellects of every age, from the time of Hippocrates to the year 1878, and as years go by and surgeons become more and more familiar with the use of the lithotrite, his fame among the followers of our art will become imperishable.

A PRACTICAL POINT IN THE TREATMENT OF POTT'S DISEASE OF THE SPINE.*

By A. B. JUDSON, M. D.

THE treatment of Pott's disease is always open to amendment. I propose, therefore, in order to assist the practitioner, a simple rule, as follows: The efficiency of the apparatus used is to be measured by the condition of the skin covering the projection.

A few words in explanation will not be out of place. It is premised that the object of mechanical treatment is to make pressure on the projection with the threefold purpose of (1) enforcing fixation of the bones involved, (2) transferring pressure from the diseased bodies to the healthy processes, and (3) lessening the deformity. If we were dealing with the skeleton deprived of its integument there would practically be no limit to the pressure which might be applied to the projection. But the interposition between the apparatus and the vertebral column of the sensitive skin places a peremptory limit to the degree of force which it is possible to apply. The rule may therefore read: The apparatus may be considered as having reached the limit of its efficiency if it makes the greatest possible pressure on the projection compatible with the comfort and integrity of the skin.

* Read before the American Orthopædic Association at its annual meeting, September 18, 1888.

This rule may be followed with perfect regard to the comfort and convenience and relief of the patient. If, contrary to common sense, the apparatus is fastened at once as tight as it can be borne, the skin will react speedily with pain and ulceration. But if the pressure is lightly applied at first, as may be conveniently done with apparatus constructed with this in view, and gradually and carefully increased from time to time, it will be found as the weeks and months go by that the skin has become indurated without losing its integrity or causing inconvenience, and its condition will be unimpeachable evidence that, so far as mechanical means go, the patient is receiving a full measure of the benefit of treatment.

Through the negligence of the nurse or the willfulness of the patient, apparatus designed for use in this way may produce, and occasionally has produced, abrasion and ulceration. But this should not be considered a good reason for condemning the apparatus. It is well to bear in mind that the disease in question is perhaps the most insidious in its progress and disastrous in its results of all the affections to which the young skeleton is liable. Shall we not make use of the most efficient method at hand and, if necessary, redouble our carefulness and painstaking in order to avoid incidental excoriation?

There are methods of treatment to which the rule proposed does not apply very closely. I refer to those methods which have for their principal features suspension and plastic dressings. If the patient is suspended and plaster of Paris applied, the pressure is diffused rather than concentrated, and changes in the skin are less marked and it is less easy to adjust the direction and degree of pressure on given points, while it is especially easy and convenient to do this with a brace constructed of tractable steel. I would not decry the use of plastic dressings in the treatment of this affection. They are daily affording comfort and relief to numbers of sufferers who would otherwise have nothing done for them. They will continue, perhaps, to be used by the general surgical practitioner. But I think the specialist in orthopædic practice can do better. He has a better method at his command in the use of tractable steel modified to meet the varying requirements of the case to which he devotes himself with the patience and ingenuity which are a part of his equipment.

To the practitioner of this class I commend the rule suggested above to the effect that the question of the efficiency of the apparatus is to be determined by the condition of the skin covering the projection, a rule which many of us have doubtless followed in practice, and which it can do no harm to have expressed in words.

4 EAST TWENTY-FIFTH STREET, MADISON SQUARE.

Variolous Periostitis.—According to the "Lancet," "four cases of variolous periostitis have been observed by M. Barié. The bones most frequently attacked have been the left tibia, the radius, and the humerus. The periostitis generally appeared five or six weeks after the onset of the small-pox, and manifested itself first by severe pain, limited to one part of the skeleton. There was no redness or heat of skin; a sort of swelling, 'hard œdema,' might be found over the seat of pain, but no fluctuation. Probably its pathology is identical with the periostitis following on or supervening in typhoid fever."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 22, 1888.

ECLAMPSIA AND ALBUMINURIA.

IN a recent contribution to this subject ("Arch. f. Gyn.," xxxii, 3) Lantos arrives at the following conclusions:

1. Albuminuria occurs more frequently in parturient than in pregnant women, which may be explained by the fact that during labor the uterus is subject to great contraction and tension, whereby the nerves in the uterine wall are subjected to greater irritation than usual.

2. This occurs more frequently in those who are pregnant and parturient for the first time, for, while the uterine wall itself is able to offer greater opposition to tension, this opposition acts as a nerve impulse.

3. In twin labors and labors at term, therefore, albuminuria is more common, because the increased volume of the contents of the uterus is the cause of greater tension.

4. Protracted labors cause protracted irritation, and favor the existence of albuminuria.

5. The artificial termination of labor can only be regarded as a means of nerve irritation which increases the already heightened reflex excitability of the vaso-motor nerves of the uterus and kidneys. The percentage of cases of albuminuria among those with whom labor has thus been terminated is much larger than with others.

6. Albuminuria occurs most frequently among primiparæ between fifteen and twenty years old, apparently as an expression of the heightened susceptibility to irritation of this period of life. Though the largest number of sufferers from albuminuria are found in multiparæ between the ages of thirty and thirty-five, it is due to the fact that, relatively, the largest number of women bear children during that period.

7. The quick disappearance of albumin from the urine is explained by the subsidence of nerve irritation.

8. The well-settled fact that in the ordinary albuminuria of pregnancy albumin is not constantly demonstrable can not be explained by the mechanical theory. According to that theory, the constant and increasing pressure of the uterus upon the veins as pregnancy advances should have the effect not only of causing albumin to disappear at times, but altogether. On the other hand, these cases are easily accounted for if we assume that the nerve irritation disappears either on account of changes in the position of the fetus or on account of habituation to the irritant.

It is therefore possible to believe that in cases in which there are no tissue changes in the kidneys, albuminuria of pregnancy and labor may be regarded as of no pathological significance, being a very common symptom arising from reflex irritation of the vaso-motor nerves of the kidneys, excited by

irritation of the nerves in the uterine wall. As a diagnostic sign of pregnancy this condition may be considered as of some importance.

We have only to look back a century to realize the hold tradition had upon our fathers, and the great advances in our knowledge of to-day. In the article quoted it is plainly taught that the albuminuria of pregnancy may not denote any pathological change, and may even be useful in determining a diagnosis of pregnancy. What would the obstetrician of half a century ago, who saw with the appearance of albumin in the urine of his patient unhappy visions of eclampsia and its frequently unhappy consequences, say to this? It is not long since Roberts remarked that a small quantity of albumin in the urine seemed to have no special significance with some men ("Urinary and Renal Diseases," 1885, page 196), Gull suggesting that the condition is due to atony of the vessels and nerves, and Bamberger that it is due to vaso-motor change in the kidney which may cause slowing of the circulation in the glomeruli. Such a cause is also suggested by Lantos in the article under consideration, other writers being also adduced to establish the neurotic origin—or, perhaps better, a neurotic origin—of the albuminuria of pregnancy. Among recent systematic writers upon obstetrics, Lusk recognizes this possibility, and we do not see that Lantos has made any particular advances upon the opinions which prevailed concerning the ætiology of this condition when Lusk's work first appeared. In removing it from the list of those symptoms which excite alarm, however, he has certainly taken more advanced ground than Rayner and Simpson, who were principally instrumental in introducing the subject, and it is certainly a great advance to remove an alarm-causing symptom to the position of a useful element in the formation of a diagnosis.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 18, 1888:

DISEASES.	Week ending Sept. 11.		Week ending Sept. 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.	73	15	53	15
Scarlet fever.	60	23	68	16
Cerebro-spinal meningitis.	2	2	0	0
Measles.	68	6	83	8
Diphtheria.	52	13	54	17
Yellow fever.	0	0	1	1

The American Gynecological Society.—At the thirteenth annual meeting, held in Washington, on the 18th, 19th, and 20th inst., the vote of last year with reference to the entrance of the society into the Congress of American Physicians and Surgeons was reconsidered, and on motion it was unanimously decided that the society should enter the congress. On motion of Dr. Busey, Dr. Fordyce Barker was appointed a member of the executive committee of the congress from the society. The following officers were elected for the ensuing year: President, Dr. H. P. C. Wilson, of Baltimore; vice-presidents, Dr. W. T. Lusk, of New York, and Dr. E. W. Jenks, of Detroit; secretary, Dr. J. Taber Johnson, of Washington; treasurer, Dr.

Matthew D. Mann, of Buffalo; members of the council, Dr. E. Van De Warker, of Syracuse, Dr. J. E. Janvrin, of New York, and Dr. G. J. Engelmann, of St. Louis. It was voted to hold the next meeting in Boston, beginning on the fourth Tuesday of September, 1889.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 26 to September 15, 1888:*

A board of medical officers to consist of ALDEN, CHARLES H., Major and Surgeon, STERNBERG, GEORGE M., Major and Surgeon, McELDERRY, HENRY, Major and Surgeon, and CARTER, EDWARD C., Captain and Assistant Surgeon, is constituted to meet in New York city on October 1, 1888, or as soon thereafter as practicable, for the examination of assistant surgeons for promotion and of candidates for admission to the medical corps of the army. S. O. 203, A. G. O., September 1, 1888.

BROWN, P. R., Captain and Assistant Surgeon. Ordered from Fort Niagara, N. Y., to Fort Sidney, Neb. S. O. 206, A. G. O., September 5, 1888.

PAGE, CHARLES, Colonel and Assistant Surgeon-General, Medical Director of the Department, will proceed to Forts Riley and Hays, Kansas, post near Denver, and Forts Crawford, Lewis, and Lyon, Colorado, and return, on public business. The travel enjoined is necessary for the public service. S. O. 114, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, September 7, 1888.

NORRIS, BASIL, Lieutenant-Colonel and Medical Director, will proceed to Fort Klamath, inspect the medical department at that post, and upon completion thereof return to these headquarters. S. O. 103, Headquarters Department of the Columbia, Vancouver Barracks, Washington Territory, September 3, 1888.

CALDWELL, DANIEL G., Major and Surgeon, is granted two months' leave of absence from September 14, 1888. S. O. 210, A. G. O., September 10, 1888.

AINSWORTH, FREDERICK C., Captain and Assistant Surgeon, will, by direction of the Secretary of War, proceed to Kennebec Arsenal, Augusta, Me., on public business connected with the Medical Department of the Army; on completion thereof will return to his station in this city. S. O. 211, A. G. O., Washington, D. C., September 11, 1888.

BANISTER, JOHN M., Captain and Assistant Surgeon, is granted two months' leave of absence, with permission to apply for an extension of one month, to take effect when his services can be spared. S. O. 211, A. G. O., September 10, 1888.

By direction of the acting Secretary of War, Captain NORTON STRONG, Assistant Surgeon, will report in person at eleven o'clock, A. M., October 18, 1888, to Brigadier-General John R. Brooke, president of the retiring board in session at Omaha, Neb., to give testimony in a case pending before the board. Upon completion of this duty he will return to his proper station. Par. 9, S. O. 212, A. G. O., September 12, 1888.

JAEVIS, NATHAN S., First Lieutenant and Assistant Surgeon, is granted one month's extension of leave of absence, on surgeon's certificate of disability. S. O. 210, A. G. O., September 10, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending September 15, 1888:*

CRANDALL, R. P., Assistant Surgeon. Detached from the Saratoga and to await orders.

DUBOSE, W. R., Passed Assistant Surgeon. Detached from the Jamestown and ordered to the Constellation.

ARNOLD, W. F., Nashville, Tenn. Commissioned Assistant Surgeon in the navy. August 18th.

LUNG, GEORGE A., Canandaigua, N. Y. Commissioned Assistant Surgeon in the navy. August 18th.

LUNG, GEORGE A., Assistant Surgeon. Ordered to the Receiving-ship Vermont, Navy-yard, New York.

Society Meetings for the Coming Week:

MONDAY, September 24th: Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore, Md., Medical Association.

TUESDAY, September 25th: New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private); Medical Society of the County of Lewis (quarterly), N. Y.; Boston Society of Medical Sciences (private).

WEDNESDAY, September 26th: New York Pathological Society; Auburn, N. Y., Medical Association; Medical Society of the County of Albany, N. Y.; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

THURSDAY, September 27th: New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland); Pathological Society of Philadelphia (conversational); New London, Conn., County Medical Society (extra—New London).

FRIDAY, September 28th: Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Letters to the Editor.

THE USE OF THE DRAINAGE-TUBE AFTER OVARIOTOMY.

NEW YORK, September 14, 1888.

To the Editor of the New York Medical Journal:

SIR: In your issue for July 14th is an excellent article on "The Use of the Drainage-tube after Ovariectomy." The writer's views are so sound that they commend themselves to every worker in abdominal surgery. In referring to some of my propositions concerning the method to be employed for the purpose of holding forward the retroposed and adherent uterus after freeing it from its pathological attachments he does me scant justice in that he states but a small part of what I said.

It would appear from his article that I placed much stress upon the use of the drainage-tube as an adjunct in the process. At one time I did, but soon found out that it was unsuitable, and therefore in my first reports suggested other means as answering the purpose better. I beg to refer you to the "American Journal of Obstetrics and Diseases of Women and Children" for June, 1887, p. 633: "A word now, Mr. President, in reference to the best means of keeping the uterus up. In two cases I used a simple drainage-tube, carried from the external wound down into Douglas's *cul-de-sac*, the usual position; both cases resulted satisfactorily. In two I supplemented the operation by that of Alexander—one at the same sitting as the laparotomy,

the other two weeks later; both did very well, and I think the position of the uterus and appendages was more satisfactory, in that all were lifted higher in the pelvis. I confess, though, that attachment of the fundus uteri to the lower angle of the abdominal wound (hysterorrhaphy) would seem to be the more rational, because the more simple road to the accomplishment of the object. I have used a pessary, but found it objectionable because of the pain it caused. I can imagine that cotton tampons in the vagina would answer, but the additional risk of attaching the fundus uteri is so slight and the procedure (since the abdominal cavity is already open) so direct that I should commend it as the appropriate measure for the completion of our object. Were Alexander's operation as simple, I should commend it in preference, as it is more lasting in its result. But I believe a six-months' retention of the organ in the upper part of the pelvis will insure to it a permanent retention of normal position."

And to the "Transactions of the American Gynecological Society," volume xii, pages 133, 134:

"In two instances I have sought to accomplish the end in view by the drainage-tube alone, but the ultimate result in both has been less satisfactory than when Alexander's operation has been substituted. As yet I have not used hysterorrhaphy or Mr. Imlach's method, my familiarity with Alexander's making it the easiest one for me. Reverting to the use of the drainage-tube as a means of displacing and holding the uterus and appendages forward, I found that it answered the immediate purpose very well, especially when its outer end was brought well down toward the symphysis, and precaution taken to so attach it as to prevent its displacement by the retching and other movements of the patient; but the uterus in such cases was left quite low in the pelvis, making it necessary (when the proper time had elapsed after the operation) to raise it by packing the vagina."

In the first article, under Case No. II, I point out the fact that the drainage-tube slipped from its place in the *cul-de-sac*, the end resting on the fundus, due, as I suppose, to the movements of the patient in the act of vomiting, or even from moving in bed.

The reason for my refusal to commit myself exclusively to any one of these secondary procedures (I call laparotomy and the disruption of all the adhesions affecting the uterus and appendages the primary procedure) lies in the fact that I suspected conditions might be present in some cases which would prevent one and yet admit of another. This has been confirmed by my experience with cases in which the pelvis is so deep as to make it impossible to bring the fundus of the uterus sufficiently near the anterior abdominal wall to permit of hysterorrhaphy, forcing upon me Alexander's method.

Respectfully, W. M. POLK.

THE ANTISEPTIC LOCK FOR SCISSORS AND FORCEPS.

BROOKLYN, September 15, 1888.

To the Editor of the New York Medical Journal:

SIR: I have just noticed in your issue for August 25th that Dr. William H. Wathen describes "A New Uterine Dilator," made by Messrs. Tiemann & Co. To it "has been added a principle that makes it as perfectly aseptic as it is possible to have any surgical instrument. The blades are held together by a modified French lock that admits of the instrument being separated into the different parts in a few seconds, so as to be easily cleaned and made aseptic." If Dr. Wathen will turn to the "New York Medical Journal" for March 24th, page 532, he will find therein described, under the title of "A New Antiseptic Lock for Scissors and Forceps," a lock which I had made by

Messrs. Tiemann & Co. and which is identical with the one he makes use of, without taking the trouble to acknowledge its authorship. Yours truly, CHARLES N. DIXON JONES.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

First Triennial Meeting, held in Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, DR. JOHN S. BILLINGS, of the Army, in the Chair.

A PRELIMINARY meeting was held, at one o'clock, in Grand Army Hall, on Tuesday, to receive the report of the Executive Committee and for organization. About two hundred members were present. The meeting was called to order by Dr. WILLIAM PEPPER, of Philadelphia, chairman of the Executive Committee, who read his report, setting forth the *raison d'être* of the congress. The president of the congress, Dr. John S. Billings, of the Army, was then introduced. In taking the chair, Dr. BILLINGS briefly thanked the congress in behalf of the Medical Departments of the Government, and of that of the Army in particular, for the honor of his selection as presiding officer.

The address of welcome was delivered by Dr. SAMUEL C. BUSEY, of Washington, who said:

MR. PRESIDENT AND GENTLEMEN: In behalf of the Committee of Arrangements and of the profession and citizens of this city I bid you welcome. The circumstance of the simultaneous assemblage here to-day of the special medical societies of this country will mark an epoch in the history of the American medical profession which must redound to its honor and renown. In the fact that it brings together at the same time and place those bodies of men which hold in their membership so many who have devoted their lives and energies to the study and development of special branches of medical science, and who have won by their work pre-eminence as skilled physicians and surgeons, in an organization that offers the unusual opportunity by systematic arrangement, for the consideration by specialists equally distinguished in different branches, of subjects as yet unsettled but of general medical interest, it is, perhaps, the most remarkable concourse of medical men that has ever assembled in this country. While it sets forth conspicuously this distinctive feature, it in no manner interferes with the autonomy of the constituent societies, each of which pursues its chosen method according to its own plan of organization. It utters no word in derogation of organized effort through allied associations; nor does it directly or by implication seek to control, direct, or influence the business aspects of the profession, but devotes thought and act solely and exclusively to the advancement of the science of medicine. With such a purpose in view no apology is needed for your presence here.

The gratification it gives me to welcome you is enhanced by the presence of the distinguished men from other countries, who have come to honor and encourage us, and to make "assurance doubly sure" that the promise to contribute something to the common fund of knowledge will be fulfilled. I welcome you also as a citizen of the city located by Washington and planned by L'Enfant, under his supervision, which has grown during the first century of its existence into a city surpassing in beauty and rivaling in attractiveness the more favored and older cities of both the Old and the New World; a city representing in its population sixty millions of free people inhabiting a domain stretching across a continent from ocean to ocean, and

from the frigid North, where the summer solstice finds the earth buried in snow and ice, to the evergreen and tropical South; a city holding together in one compact community a cosmopolitan population, where education and culture need neither the blazoury of titular insignia, the heraldry of ancestral distinction, nor the glamour of wealth to command position and influence; where the lady and the gentleman can always find congenial and cultivated companionship free from the conventional and exclusive formalities which disrupt society into graded coteries of self-constituted notables; where you will not be surprised to find a place of residence that has attracted the cultivated and leisure classes from every State and city in the Union. I welcome you also as a citizen of a city richly endowed by a munificent Government with scientific foundations, not as yet complete in any department, but steadily progressing toward that standard of excellence and usefulness which will in the near future make the political home of the nation the center of its science, literature, and art.

I need hardly tell you, gentlemen, how much this Government has done for our profession. You know of the Medical Library, unequalled in volumes and value, and the Medical Museum, with its anatomical and biological laboratories, unsurpassed by any similar collection in the world, both now located in a building constructed for the purpose, and so arranged as to exhibit their extent to casual inspection and to enhance their value for appropriate and available purposes. In connection with this magnificent library the publication of the "Index Catalogue," which enables the investigator to study any medical subject from its beginning down to the latest publication, and of which it is not too much to say that it will contribute more toward the higher education of the profession than any single act of any nation on the face of the globe. And all this has been accomplished in the life-time of one man, who still lives to prosecute his labors with that diligence, fidelity, and pertinacity which marks the unselfish and conscientious enthusiast.

Then, too, the Government has established, in connection with the Bureau of Naval Medicine and Surgery, a Museum of Hygiene, which offers to every citizen the opportunity to examine and study the relative advantages and utility of every device and appliance for the improvement and perfection of the hygiene of the dwelling. Under the fostering care of a liberal Government and the conscientious discipline of the Naval Bureau of Medicine this establishment has already become an important adjunct to preventive medicine, and will, without doubt, continue to grow in usefulness both to the Government and to the country at large.

The National Quarantine and Marine-Hospital Service is another establishment which allies the Government with the medical profession and brings it close to the people of the country in its beneficent purpose to provide for the sick and disabled sailors of the merchant and revenue marine, and to prevent the introduction and spread of contagious diseases into the country through its maritime ports.

It may be that the Government required these establishments to fulfill its delegated functions, and that it is compelled to secure the services of skilled medical men to superintend their proper administration; nevertheless, even admitting this necessity to be the primary cause for their creation, it in no manner impairs their value to the profession, and their foundation imposes upon us the duty to utilize them for the common good, and invites us to aid in developing and widening the scope of these endowments to the end that we and the people may realize the full measure of their usefulness.

The bureaus of military and naval surgery are also located here. It is true they are corps constituting an important and

essential part of the complete equipment of the military establishment of the nation. They are, nevertheless, the instrumentalities through which the Government has been enabled to call into its service medical men of the highest order of professional attainments, and to accomplish so much in promoting the advancement of scientific medicine.

The Government has been equally generous toward other departments of science. If the time and occasion permitted, it would give me great pleasure to lay before you in detail the work being done in the scientific bureaus established and supported by the General Government in this city, and also to refer to the eleemosynary and educational institutions founded and exclusively supported by the Government, as well as to others to which it contributes annually a liberal though partial support. I must, however, be content with the bare statement of the fact that you can carry home with you the conviction which I wish to impress upon you in behalf of our city that, by virtue of the foundations and endowments of the Government, it has become a scientific and educational center equal to any and surpassing most of the older, richer, and more populous cities of the country. In this connection I can not omit reference to her admirable system of common schools and her universities—that of Georgetown, with its department of humanities, philosophy and science, and of law and medicine; the Columbian, with its preparatory scientific, law, and medical departments; the National, limited as yet to law, medicine, and dentistry; the Howard, specially devoted to the education of the colored citizens, with departments of literature, law, medicine, dentistry, and theology; and, finally, the new Catholic, now in course of organization and construction. To all this let me add the Smithsonian Institution, with its annexes of the National Museum and the Fish Commission; the Department of Education; the National Academy of Sciences, which by law is required to hold its annual sessions in this city; and the voluntary scientific organizations, known as the Philosophical, Biological, and Anthropological Societies, which bring together at stated periods the men of learning and science residing here either officially or for convenience or comfort—and you will realize something of the scope and importance of the scientific and educational work now carried on in this city, as well as the prominent position already achieved by science, and the justification for our faith in the greatness of its future. And now, having briefly suggested our present and prospective claims to a prominent place as a scientific center, will you not join with me in the hope that this, the cosmopolitan city of the nation, the heart of its political life, may also speedily become its scientific and educational Mecca as well?

There is yet another relation which the Government holds to its capital, the wisdom of which one can not fully appreciate without a residence long enough to observe its practical bearing. By a provision of the Constitution the territorial area is held under the exclusive jurisdiction of Congress. The Government holds in fee simple the title to all the public highways, the public buildings, and the numerous parks; makes all laws, appoints all officers, levies, collects, and disburses all taxes; and contributes an equal amount to the support of the municipality. To her the citizens are indebted for these beautiful streets, these avenues of shade-trees, the flowing fountains, and decorated parks which adorn the landscape at every turn with foliage, flowers, and sward, and contribute so much to the healthfulness of the city. This is the capital of a great, growing, and prosperous nation, beautiful in design, and susceptible of greater and more magnificent embellishment. Every citizen of the country should share in the wish for its substantial improvement and adornment, that it may become commensurate with its importance and capabilities. The time is not very remote

when the fostering care of a generous Government and the energy of its resident population will make it the most desirable city for residence in this great and populous country; when its suburban elevations will be covered with winter residences and summer villas, rivaling in beauty and grandeur the taste and display along the cliff at Newport.

I need not tell you that Washington is a healthy city, but I will send a message through each of you to the people at your homes, that you may tell them how much their Government is doing to improve the healthfulness of this city. In time past we have read the graphic descriptions of the dreadful malaria that was so dense it could be sliced into blocks, followed people in fierce pursuit at every turn during the day, howled under the eaves at night, stole through the stomach, and sneaked under the nether garments. But, thanks to the Government, the river marshes are being reclaimed, and in the near future the river front of our city will be covered by a magnificent park, washed along its entire shore by the swift current of a river of drinking water. You may tell them too, if you please, that the malaria of the correspondent and casual visitor covers some one or more of a great variety of excesses which prudent people should not commit. Take home with you this message from one who has lived forty years in sight of, and breathed the air coming with every southern wind over, the Potomac flats, and has never yet had the fever and ague.

The Executive Committee further reported the following by-laws, which were unanimously adopted:

1. This organization shall be known as the Congress of American Physicians and Surgeons.
2. It shall be composed of national associations for the promotion of medical and allied sciences.
3. It shall hold its sessions triennially in the city of Washington, D. C.
4. The officers of the congress shall be a president, a vice-president, a secretary, a treasurer, and an executive committee.
5. The president shall be elected by the Executive Committee, of which he shall be *ex officio* a member.
6. The presidents of the participating societies shall be *ex officio* the vice-presidents of the congress.
7. The secretary and treasurer shall be elected by the Executive Committee, and they shall be *ex-officio* members of the Executive Committee.
8. The Executive Committee shall be composed of one member from each participating society, and said members shall be elected by the various societies at the next annual meetings subsequent to the congress. It shall be charged with all duties pertaining to the organization of and preparation for the ensuing congress, including the election of all officers and of a Committee of Arrangements. It shall superintend the publication of the transactions of the congress.
9. The expenses of the congress shall be divided between the participating societies in proportion to their membership.
10. The admission of new societies to participation in the congress shall be by unanimous vote of the Executive Committee.

The meeting then adjourned until 8 P. M.

Intestinal Obstruction in its Medical and Surgical Relations.—Dr. R. H. Fitz, of Boston, read a paper in which he discussed the diagnosis and treatment especially of acute obstruction. He divided obstructions into mechanical and functional, the former comprising all cases where actual compression brought the walls of the gut into contact, the latter embracing cases of perverted or suspended action in the gut itself, such as spasm, peritonitis, perityphlitis. The danger of error in such cases was referred to, and the risk of killing the patient by drastic remedies, which were of all things contra-indicated. He made

a full analysis of the varieties of causes of acute mechanical obstruction. He also referred to its relative frequency in both sexes and at various ages. There were four questions which principally arose for decision by the medical attendant: Was the obstruction acute? Where was it situated? Of what sort? What should be the treatment? The answers depended upon the symptoms. He described different measures of relief, especially by the injection of water or air; massage, the use of the rectal sound, the hand passed into the rectum, each had its limitations and dangers. He admitted that their value was the greatest if used early in the first two days. He believed that the first duty of the physician was to attempt relief by all procedures not surgical in the first two days. In intussusception a longer time was admissible. Here he would try opium, waiting, and massage. When failure was evident, a surgeon should be called. Obstruction by gall-stones or feces demanded the same treatment, plus washing out stomach.

Dr. NICHOLAS SENN, of Milwaukee, read a paper strongly advocating a strictly surgical treatment from the first. He believed that all cases belonged to surgery. Functional forms of obstruction were not distinguishable certainly from the mechanical. The mortality until a recent date had been great from both surgical and medical treatment; sixty per cent. died. An improvement in treatment was badly needed. Delay of all things was to be deplored, since the delicate structures involved rapidly altered to a condition where the most skillful surgeon was helpless; fifteen minutes were long enough for efforts at relief and reduction or for the establishment of a diagnosis justifying delay; after that, antiseptic laparotomy presented the safest procedure. In chronic obstruction, waiting was quite different. The preliminary treatment should invariably be irrigation of the stomach with water charged with a non-irritant antiseptic, the removal of pressure, and peristalsis in the gut above the obstruction; the removal of the stomach and part of the gut contents; the prevention of subsequent gas formation; the averting of danger from vomited matter entering the larynx. He placed no trust in the distension of the colon by fluid as a means of treatment and for diagnosis, as only the lower bowel was thus affected, for the ileo-cæcal valve was impervious to liquids. Why, asked he, employ a fluid? He deplored the force necessarily used in overcoming friction and the weight of water, especially if attempts were made to force it through the ileo-cæcal valve. He used the light compressible antiseptic hydrogen gas, which, under one quarter to two pounds pressure, passed the valve, while eight to twelve pounds were needed to injure anything, even if forced from the anus to the mouth; if it escaped by a perforation into the peritonæum it did no harm. The perforation was proved by the escape of gas. Tympanites produced by escaped hydrogen appeared where it collected above the liver. Slowness and gentleness of injection was important. Each one of many perforations was thus successively revealed until all were found. When the valve was passed a gurgle was heard, and the full pressure in the gas reservoir told height to which the gas had gone. The site of the obstruction was thus discovered and easily followed up. Tubage of the rectum was uncertain and limited to the lower bowel. Manual exploration of the rectum was useful for obstructions in the pelvis, as volvulus; bands, tumors pressing upon the viscera, carcinoma of the gut, and intussusceptions. A small hand was essential. Taxis and massage were good only in intramural occlusions and some invaginations. Uniform pressure over the whole abdomen was useful to secure rest and prevent hyperdistension. Enterostomy and formation of an artificial anus should become obsolete, as being only an imperfect means of relief, not securing diagnosis, leaving the necessity for another operation, and establishing a mis-

erable condition for life. Only the inability of the patient to survive a radical operation or other absolute necessity should justify its employment. In less urgent cases, as cicatricial contraction or to prolong life in carcinoma, enterostomy was equally safe and easy. The edges of the wound approximated by decalcified bone-plates secured rest to the parts united, and union was better during congestion than if congestion was absent. It was equally useful in gastro-enterostomy when the pylorus was occluded.

Dr. WILLIAM PEPPER deferred his paper to enable foreign guests to speak.

Mr. WILLIAM DURHAM, of Guy's Hospital, London, agreed with Dr. Fitz as to the symptoms and diagnosis, and with Dr. Senn as to the need of early surgical aid. The earlier the better, and as soon as a diagnosis could be made. Diagnosis was often difficult or impossible; statistical probabilities were unreliable, so sometimes operation done without diagnosis and in order to make a study of the actual indications and conditions in each case was better than rules. The speaker had learned much from Dr. Senn about treatment. Why was hydrogen better than air? To determine the site of obstruction, if in the small intestine he believed in opening the abdomen; if in the large intestine, less hurry was demanded. He here took issue with Dr. Senn regarding lumbar colotomy, which he considered exceedingly useful, and he had often regretted not employing it for its great, safe, and certain relief, especially in cancer of the colon or rectum. He believed it as safe as the wonderful bone-plates of Dr. Senn, and he had often obtained complete recovery.

Dr. ORD, of St. Thomas's Hospital, London, admitted that the question was not best decided by physicians, and that the physician was only useful early, and not at all after it had been decided whether physiological or mechanical obstruction was present. In blind cases, with few symptoms and signs absent, he admitted that he was a coward and inclined to procrastinate. Many patients recovered unoperated on after a period of threatening symptoms. He dreaded operations, as he had seen bad results follow operations under the best conditions and highest skill.

Mr. ANNANDALE, of Edinburgh, thought it important to distinguish between acute and chronic obstructions. After forty-eight hours of general treatment failed he called a surgeon, who made an artificial anus. He believed inguinal colotomy easy and preferred it.

Dr. SENN, replying, believed that our English cousins were chiefly conservative and tenacious of old ideas. His method had stood the test of a hundred cases, union being found perfect at the autopsy in a few cases where recovery had not taken place because the operation had been done too late. He thought that colotomy was certain to become obsolete.

(To be concluded.)

AMERICAN RHINOLOGICAL ASSOCIATION.

Sixth Annual Meeting, held at Cincinnati, September 12, 13, and 14, 1888.

THE association met at the Gibson House, and was called to order by the president, Dr. C. H. VON KLEIN, of Dayton, Ohio, at 10.15 A. M.

Dr. A. B. THRASHER, of Cincinnati, chairman of the Committee of Arrangements, delivered an extemporaneous address of welcome, in which he expressed very great pleasure in giving the members of the association a hearty welcome on behalf of not only the Committee of Arrangements, but the entire medical profession of the city.

President VON KLEIN delivered his address, which was de-

voted principally to the progress of rhinology and the distinction it had attained as a specialty during the last few years.

Chorea of the Soft Palate caused by Hypertrophy and Hyperæsthesia of the Mucous Membrane covering both Inferior Turbinate Bodies.—Dr. J. E. SCHADLE, of St. Paul, read a paper on this subject. That the origin of not a few reflex nervous disorders could, with a certain degree of exactness, be traced to the presence of morbid conditions of the nasopharyngeal cavities was, he said, no longer doubted. Some forms of headache and of spasmodic asthma were in many instances the outgrowth of a nasal polypus, a turbinate thickening, or a septal deformity. These reflex neurotic disturbances disappeared soon after appropriate measures of treatment had been directed toward the removal of their cause. A case was related that had first come under the observation of Dr. Baker, of St. Paul. The only thing complained of was a constant contraction and relaxation of the levatores palati. Each contraction carried the uvula upward and backward till it came in contact momentarily with the upper and back part of the pharynx. The relaxation and separation of the moist mucous-membrane surfaces caused a sound like that produced by a rapidly ticking watch, and of the same frequency. The young lady was in excellent health, all the bodily functions being well performed. Dr. Baker's treatment had been, at first, the use of increasing doses of bromide of zinc. This not producing the desired result, he had given tincture of physostigma in doses ranging from fifteen to thirty drops. After continuing this for a time, he had abandoned it and prescribed fluid extract of *Cimicifuga racemosa*, in doses of from half a teaspoonful to a teaspoonful every four hours. On July 7, 1887, the use of galvanism was begun. Eight cells of the McIntosh battery were used, the positive pole with a sponge electrode being placed at the back of the neck; the negative pole with a metal-tipped electrode was applied to the palate just above the uvula. The sittings were of from five to ten minutes' duration, and the number of cells used was increased to eleven. Examination showed enlarged tonsils with evidence of throat and nose disease. The patient was examined by Dr. Schadle on the 16th of April, 1888. She suffered from constipation and flatulence quite frequently. The heart's action was more or less excited, the organ beating tumultuously when she ascended a flight of stairs or any elevation. She complained in a marked degree of obstructed nose breathing. Her voice was impaired, especially when she attempted to produce head-tones, as in singing. The principal affection complained of, and the one for which she had been referred to him, was the spasmodic movement of the velum palati. A faucial examination revealed distinct rhythmic choreiform movements of the velum palati, accompanied by a peculiar clicking sound, distinctly audible for a distance of twelve or fifteen feet from the patient. Anterior rhinoscopic examination revealed chronic hypertrophy of the inferior turbinated bones, and, in a more marked degree, of the middle one, the presence of whose redundant tissue exerted pressure on the septum and produced obstruction of the middle meatus. The treatment was mainly surgical. The first impression entertained was that possibly the enlarged pharyngeal tonsil might have been a source of the trouble and that a thorough removal of it would do away with a foreign element constantly coming in contact with the opposing surface of the velum palati, thus exciting clonic spasms. Snaring was impracticable. By the use of Cohen's post-nasal cutting forceps and the electro-cautery, he reduced the growth in its entirety, a procedure that was followed by cessation of the choreiform movements, which remained absent for a period of two weeks, when they suddenly returned during a spell of nervous excitement from which the young lady was suffering. Attention was next directed to

treatment of the nasal passages. The pathological changes found in them offered a theory for a reflex cause of the affection. Cocainizing the intranasal mucous membrane generally produced relief for half an hour. With a view to reducing the hyperæsthesia and hypertrophy of the turbinated bodies, he employed the electro-cautery, thoroughly burning the affected parts. The trouble at once ceased. Nose-breathing displaced mouth-breathing, and the dry sensation and sticky secretions of the pharynx gradually disappeared. The functional disturbances of the heart and shortness of breath passed off, while the general nervous system gained tone. The patient could now speak and sing with a clearer voice, and the head-tones were improving daily. Beyond a doubt a cure had been produced, the permanency of which had already been severely tested.

Dr. JOHN NORTH, of Keokuk, said that the case had been in the hands of excellent physicians previously, who had overlooked the nasal trouble, and it was especially interesting to rhinologists to learn that the cause of the trouble was found to be in the nose, and that by applying treatment to the nasal passages relief had been obtained.

Dr. J. G. CARPENTER, of Stanford, Ky., was convinced that the subject of rhinology was ignored more or less by general practitioners. When a patient presented himself to him with a bronchitis, laryngitis, or asthma, he invariably examined the naso-pharyngeal chambers, and usually found the starting-point there in many affections, and by treating the nasal chambers other troubles were made to subside.

A paper entitled "A Short Criticism of the Prevalent Methods of treating Diseases of the Upper Air-passages," by Dr. R. W. WILCOX, of New York, was read by title.

The Ætiology and Pathology of Nasal Diseases was the title of a paper by Dr. T. F. RUMBOLD, of St. Louis. The author remarked that the ætiology of a disease was of the greatest import. A perfect understanding of its causes and its mechanism was the goal of the pathologist. To be enabled to define with some degree of clearness the various changes that took place, from the first cold in the infant through the various stages of chronic rhinitis, not merely giving the symptoms or a cursory description of its morbid anatomy, but studying its causes and the course that the injurious impressions took to reach the ultimate region where we saw the manifestations of abnormal action, was to do much toward directing its hygienic and therapeutic management. Speaking of hereditary predispositions, he would ask the question, Had heredity anything to do in causing rhinitis? The negation to this question was given in the description of a primary cell and the mechanism of rhinal inflammation. He had long been convinced that heredity as a cause of disease was an erroneous theory. It was a daily occurrence for a patient to express fear concerning the condition of his lungs because of having had a relative die of lung trouble, fearing that the disease might have been inherited. About the first thing many physicians asked such an individual was, "Have you had a relative die of consumption?" On receiving an affirmative answer, a significant nod of the physician's head was all that was wanted to make the poor frightened fellow think of death. All that was required to shorten the life of a person thus afflicted was to thoroughly frighten him and then maintain his mind in this condition; his appetite and sleep would soon be seriously disturbed, which would surely diminish his weight and strength. The histological facts concerning cell life would prove a successful contravention of the theory of heredity.

The Influence of Morbid States or Conditions of the Body on Local Diseases was the title of a paper by Dr. H. CHRISTOPHER, of St. Joseph, Mo. There were several predisposing causes and conditions of a constitutional character which were intimately connected with local diseases, and were to be

considered in their treatment. The principal of these were: 1. Diatheses, or constitutional tendencies, with local malignant manifestations or points of eruption. 2. Constitutional tendencies attended or not by local morbid action of a non-malignant character, such as the strumous habit or the rheumatic diathesis. 3. Constitutional disturbances affecting the functions of certain organs, which in turn gave rise to morbid action in others. 4. Abnormal action or deranged function of certain organs, giving rise to morbid action in other organs uniformly or contingently, as in metastases, or functional disorder of the heart from functional derangement of the digestive organs. 5. Purely local morbid action, as in local inflammations and non-malignant tumors and some diseases of the skin. All these states of the body, except the first and last, were not infrequently found to exist with local inflammation of the nasal pharyngeal and aural cavities, and to influence and determine in no small degree their management.

The Relation of Nasal Diseases to other Diseases, including those of the Brain and Nervous System.—Dr. JOHN NORTH read a paper on this subject, in which he began by saying that there was no organ in the entire body that had been so neglected as the nose. Obscure and obstinate diseases had not yielded to treatment, because it had been directed to the effect of nasal reflex troubles and not to the nose, the cause of the trouble. In 1886 he had attempted to show that neurasthenia was frequently the result of chronic naso-pharyngeal catarrh, and in support of the theory he reported several cases of neurasthenia that yielded to treatment applied to the nasopharynx. In a paper read before the association at Washington, in 1887, he had maintained that catarrh, or rhinitis, as it was usually called, was not an inflammation, but a condition produced by a paresis of the ganglia of the sympathetic nervous system supplying the parts. Without doubt asthma was caused by vaso-motor paresis causing a dilatation of the vessels. It was a well-known fact that disease in one part or organ would cause derangement in another organ, even in remote portions of the body, through the agency of the sympathetic nervous system. Dr. Mackenzie, of Baltimore, Dr. Daly, of Pittsburgh, Dr. Roe, of Rochester, Dr. Seiler, of Philadelphia, Dr. Schadle, of St. Paul, Dr. Bosworth, of New York, and others in this country, besides a number of European rhino-laryngologists, had reported cases of asthma and hay fever dependent upon diseased conditions of the nasal cavities.

The Effect of Nasal Inflammation on the Mind was the title of a paper by Dr. RUMBOLD. The normal condition of the mind, he said, depended upon a normal supply of blood to the normal brain. An abnormal supply of blood, even to the healthy brain, would produce an abnormal condition of the mental faculties. He had noticed for many years that in every patient who had suffered an attack of cold in the nasal passages olfaction was almost completely obtunded, with the mental powers more or less lowered in their capacity. It followed that, if an acute inflammation in the nasal passages was accompanied by mental manifestations, mental incapacity of a more severe character must accompany a chronic rhinitis. Clinical observation had shown that this was the case.

The Ætiology and Pathology of Acute Catarrh.—Dr. J. G. CARPENTER, of Stanford, Ky., read a paper on this subject. Among the most prominent causes he mentioned occupations attended with the production of much dust, smoke, excessive moisture, or a dry, dusty atmosphere, going about insufficiently clad, the evil results of the ordinary slippers, etc. Seal-skin saques, while they were very beneficial in cold weather, were capable of doing great evil when worn imprudently. Pathologically, acute catarrh was divided into three stages: 1. The dry stage, attended with hyperæmia, redness, heat, tumefaction,

and pain of the mucous membrane, the latter presenting a red, dry, or dark-red appearance. 2. The moist stage, supplementing the first; there was transudation of serum, with diapedesis of the white corpuscles into the connective tissue, cell proliferation, and organization of lymph. The mucous follicles and glands were enlarged and distended and excessively active. 3. The purulent stage, in which there was denudation of the epithelium, giving rise to a raw surface, and the excessive mucous secretion was changed to a muco-purulent or purulent one.

Intranasal Obstructions.—Dr. R. S. KNOX, of Fort Wayne, Indiana, read a paper thus entitled. He said that of all the mucous surfaces, that of the nose was, perhaps, the most sensitive to irritating gases, vapors, and dusts of different kinds, as well as sudden changes in the atmosphere, and it made but little difference what the condition of the atmosphere might be to the one exposed, whether loaded with dust, an odor offensive or fragrant, hot or cold, pure or irritating; the nose must receive it, filter and purify it, warm and moisten it, for the lungs. Intranasal obstructions might be temporary or permanent, partial or complete, according to the extent of the inflammation or injury that produced them. Temporary occlusion was usually the result of some one of the forms of acute rhinitis. Whatever the cause, with proper hygienic measures the membrane usually regained its natural condition in the course of a few weeks. This, however, was not always the case. Occasionally, from a very severe attack, or from the effects of repeated colds, we might find the membrane overwhelmed with plastic material, causing a loss of nerve power, a pale, flabby, wrinkled condition somewhat resembling polypus, but with more sensitiveness to the touch, the membrane completely filling up both cavities of the nose. In this condition he had found nothing act so promptly as to first use a one-per-cent. solution of cocaine, applied with a probe and cotton, and followed with mildly stimulating solutions of chromic acid, ten grains to the ounce, after which the vaseline treatment should be used. If stenosis returned, a second application of the acid might be made, or slippery-elm plugs, slightly moistened with a weak preparation of cocaine and listerine, might be used.

A Case of Enlarged Tonsils with Peculiar Symptoms relieved by the Galvano-cautery Snare was reported by Dr. E. G. KEGLEY, of Cedar Rapids, Iowa. A man, forty-three years old, consulted him in January, 1888, with regard to a trouble which he termed drooling. The patient presented the appearance of one suffering from hay fever. His eyes were red and swollen, with excessive lachrymation, constant flowing and wiping of the nose, with the addition of a constant spitting of a clear fluid. On examination, he found the nasal mucous membrane highly congested and completely closing the nasal passages. The patient's mouth was constantly filled with saliva, and the tonsils were enormously enlarged, filling the back part of the mouth and throat completely. These spells were very common, and lasted from a week to two weeks. During the attacks he had no appetite, and could not sleep, because of a choking sensation and of the water in his mouth. He had consulted many physicians, but had derived no benefit from their treatment. Dr. Kegley watched the patient through this attack, and told him to report himself when another made its appearance. In the mean time he saw him between the attacks and found the membranes of the nose normal, but the tonsils were very much hypertrophied. He therefore urged the patient to have the tonsils removed. He saw him again in about a month in another attack, but could do nothing for him. He then lost sight of him for a year, when he returned to him and said he was ready to submit to anything. He was now suffering from a very severe attack. Dr. Kegley proceeded to cocaineize the tonsils, and removed them both at one sitting by means of the

galvano-cautery snare. He saw the patient the next day, and he said the trouble had ceased almost simultaneously with the removal of the tonsils. The patient had had no further trouble.

The Surgery of Gummatous Growths of the Nasal Cavities.—Dr. A. G. HOBBS, of Atlanta, Ga., presented a paper on this subject, and reported four cases. In the first case the patient had been brought to him to be treated for stenosis of the nasal passages. She was a young married woman, who had had syphilis for three years. The usual treatment had been adopted, and no syphilitic symptoms had shown themselves during the past year. An anterior examination revealed a purplish-red growth which filled the right nasal space completely, and pressed itself into the left cavity till the stenosis was almost, if not quite, complete. From the history of the case and the appearance of the growth its gummatous nature was suspected; hence it scarcely occurred to him at this time to attempt its removal by any surgical means for fear of producing a destructive ulceration. She was placed upon the use of increased doses of iodide of potassium, together with biniodide of mercury. This treatment was continued for four weeks without any marked benefit. Dr. Hobbs cocaineized the nasal passages with a 5-per-cent. spray as thoroughly as possible, then attempted to introduce a Blake's snare, but found it impossible to engage the tumor in the loop. A cutting-spoon was introduced, and several large masses of the growth were cut away. The hæmorrhage was very little. When the flow had ceased she could breathe through the left nostril. Four more sittings, at intervals of three days, were necessary to remove the entire growth. The attachment was by a broad pedicle at the posterior part of the septum, which he seared with the galvano-cautery, when the last particles of the growth that could be seen had been extracted. The patient was furnished with a spray apparatus. No ulceration followed. Six months afterward there had been no recurrence, and the patient had regained her health completely. She was kept on the use of antisyphilitic treatment during the six months.

The second case was one of hypertrophic nasal catarrh. Jarvis's snare was used and the operation was the same as in the first case.

The Surgical Treatment of Nasal Catarrh.—Dr. A. B. THRASHER read a paper on this subject. He said there were forms of nasal catarrh that could only be benefited, and not cured, by medicinal treatment. When there were mechanical obstructions to the lumen of the naris of a hypertrophic, hyperplastic, or neoplastic character, surgery offered the most direct path to the removal of the difficulty. These were the cases of nasal catarrh which had passed from one doctor to another, the patients having used all the advertised remedies, so called, and having at last concluded that nasal catarrh was incurable. Since the cavity of the nose was open to inspection, directly and indirectly, it was rather curious that surgeons had been so slow to invade this region. They would cut with impunity into the abdominal cavity and remove or examine the contained viscera, or open the thorax and tie an artery, or evacuate an abscess, or even cut into the brain box to elevate a depressed bone or remove a tumor; and yet stand with folded hands and do nothing to check the symptoms caused by a neoplasm springing from the middle turbinate, or a hypertrophy at the pharyngeal vault. This was not so curious when physicians stopped to think that the removal of a growth from the posterior middle turbinated body required more manual dexterity and tactile skill than to open the abdomen, thorax, or even the cranium itself. When a simple enlargement of the turbinated body was encountered, which it was desirable to reduce or remove, what was the best method of procedure? There were cases in which the application of a chemical caustic answered the purpose admirably. Woakes's gouge or plow would do the work, and by

the aid of cocaine would do it rapidly and painlessly. In uncomplicated cases of chronic hypertrophic rhinitis the conditions to be met were: Obstructions to the lumen of the nares and an abnormal condition of the mucous glands. The causal indications would at once suggest a removal of the redundant tissue. The means employed should look to the accomplishment of this end with the least resulting scar surface, so that the natural condition of the epithelial covering might be simulated as nearly as possible. To reach this result he had met with the most marked success in the use of the galvano-cautery knife. He first anesthetized the part with cocaine, then introduced the knife to the posterior part of the hypertrophy, turned the sharp edge toward the tissue to be cut, heated the knife white hot, and cut deeply, drawing the knife forward. The result was a deep linear scar in an antero-posterior direction through the hypertrophic tissue. He cut deep enough to destroy a portion of the submucous erectile tissue. When this cut healed the result was a linear scar, and by the natural contraction of the cicatricial tissue the surface became in time practically obliterated.

Officers for 1889 were elected, as follows: President, Dr. John North, of Keokuk, Iowa; vice-presidents, Dr. A. G. Hobbs, of Atlanta, Ga., and Dr. A. B. Thrasher, of Cincinnati; secretary and treasurer, Dr. R. S. Knobe, of Fort Wayne, Ind.; librarian, Dr. N. R. Gordon, of Springfield, Ill.; members of the council, Dr. Hiram Christopher, of St. Joseph, Mo., Dr. J. G. Carpenter, of Stanford, Ky., Dr. Thomas F. Rumbold, of St. Louis, and Dr. J. G. Sinclair.

It was voted to hold the next meeting in Chicago.

Reports on the Progress of Medicine.

DISEASES OF CHILDREN.

By ANDREW F. CURRIER, M. D.

The Ætiology of Trismus or Tetanus in the Newly Born.—Beuquer ("Arch. di patol. inf.," July, 1888) has demonstrated the identity of this disease in infants with that which occurs in children and adults, and also that it is dependent upon the infectious power of the bacillus of tetanus. In the newly born, infection is especially prone to take place through the medium of the umbilical stump. An infant who died upon the eleventh day from birth furnished the author with material for bacteriological investigations, and enabled him to demonstrate that the umbilicus was the gate of entrance for the bacillus of tetanus. From these investigations it appeared that the bacillus was greatly diffused; it was found in the filth and dust of the streets, and in that which accumulates in the house. In smaller numbers and less constantly it is found in clean soil and in the deeper strata of earth in the streets. The umbilical wound may be infected by the bacillus in two ways—either by the hands of the midwife or attendant who ties the cord, or by the medicaments which are usually applied upon a small bit of oily rag. It is therefore evident that the prevention of tetanus must be associated with the most careful attention to the hygiene of the umbilicus; and the umbilical wound, like all other wounds, should receive all necessary antiseptic attention. The attendant must first be certain that his own hands are thoroughly clean and disinfected, and then he can wrap the stump in sterilized cotton-wool. This must be dressed every day after the infant has had his bath until the wound is cicatrized.

The Operative Treatment of Cephalocele.—Flothmann (*ibid.*) remarks that the prognosis in cephalocele in general is unfavorable, children who are thus afflicted usually not living more than a few weeks or months. Simple encephalocele differs from the other hernial tumors of the head—hydronephalocele and meningocele—in the fact that the

prognosis is favorable and the disease sometimes curable. The statistics of Schatz have shown that there were 60 per cent. of deaths from all operations on cranial tumors. The author believes that the unpublished cases would raise the percentage to between 70 and 80 per cent.; hence the propriety of publishing each successful case. The child in question was born January 6, 1885, and the tumor was so large at birth that the friends thought there were two heads. The tumor was of oblong form, attached by a pedicle one centimetre below the occipital protuberance, and hung down the back as far as the lower limit of the scapula. It was transparent, soft, elastic, and fluctuating. Its wall was continuous with the skin of the head, and it had fine hairs upon it. The pedicle was transverse, and measured seven centimetres from left to right. Compression caused no cerebral symptoms, but did not diminish the size of the tumor; the latter did not appear to give rise to any symptoms excepting discomfort from its weight. An operation was suggested, the prognosis being grave, and the parents consented. The base of the tumor was transfixed and tied, and the latter was cut away. The edges of the wound were brought together with twelve sutures, and antiseptic dressings applied. There was no shock and no apparent interference with the healing process, the child ate and slept well, and the wound was entirely healed when the last sutures were removed. The contents of the tumor were a red serous fluid containing albumin. It weighed twenty-six ounces. Part of its interior showed a villous structure, the villi of which were found to be developments from the *tela chorioidea*. The dura mater was continuous by a small tract with the cyst wall. The inner layer of the cyst was formed by the pia mater; the external layer by the skin. Eighteen months later the child was seen again, and found to have an enormous hydrocephalus. The fontanelles were dilated, especially the greater one, and the sutures were widely separated. There was a deep depression at the site of the former tumor, and the surrounding tissue was compact. The child was obliged to keep the horizontal posture; the psychical development was not arrested; the appetite and digestion were good, but the body was small, and the muscles were poorly developed. This condition, together with that which existed at birth, were believed to be due to foetal pathological conditions of the brain and its membranes.

The history of attempts made to cure hydrocephalus, whether by compression, puncture, and subsequent compression, elastic ligature, crushing, linear compression, injection of iodine, or extirpation, show the following results: In five cases, in which the cephalocele was small, cure was obtained in four by simple compression; in the other case the tumor increased in size. Puncture has been tried many times, but has almost always caused death from meningitis. Adams reports a case in which he punctured seven times, the tumor being as large as a hen's egg, and finally it became reduced to the size of a nut. Puncture with injection of sixty grains of a half-per-cent. solution of carbolic acid ended fatally in four days. Puncture associated with the elastic ligature in one case resulted in cure in eighteen days; in a second case death resulted on the eighth day. In Nicoladoni's case of pseudomeningocele a cure resulted in forty days after puncture, injection of iodine, and the application of pressure bandages.

Irrigation of the Stomach in Nursing Infants.—Seibert ("New Yorker med. Presse," June, 1888) remarks that Epstein was the first to recommend this procedure for infants and children in 1880, but it received little attention, and when Epstein referred to it a second time, in 1887, there were still few who had had much practical experience with it. In Epstein's second paper he reported an experience in 5,000 cases, the results in which had been better than had attended the use of other means. The following are the indications for irrigation of the stomach:

1. Dyspepsia in infants which is characterized by the ejection of a portion of each meal. It often affects children in the first months of life, and may be due to too frequent, too hurried, or too abundant feeding. As a result, not only is the growth of the child checked, but the stomach is so deranged that it readily becomes involved in other diseases. In many cases simple regulation of the diet is all the treatment that is required. But should the vomiting continue, a single washing out of the stomach may be sufficient to correct the indigestion.

2. In acute diarrhoea the removal of the decomposing and fermenting matters which have caused the trouble may suffice. Should this

condition be followed by collapse, it seems rational that the poisonous elements which have caused it should be removed as quickly as possible from the folds of the gastric mucous membrane. The use of the various antiseptics, which act by clearing out the intestines, shows that the prevailing ideas in respect to treatment imply that such evacuations are a necessity. The irrigation of the stomach acts antiseptically, for it clears away septic material. The fact that a single irrigation often suffices to stop vomiting shows the value of this method of treatment. The stomach having been cleared out and the capability of retaining stimulants having been regained, the prognosis in many cases is vastly improved.

3. In chronic catarrh of the stomach and large intestine which defies all treatment by drugs and diet, irrigation has given the most satisfactory results. The intestinal catarrh in such cases is usually caused by the continued retention in the stomach of the products of decomposition, and each new addition of food to the stomach is apt to become infected by the same. Irrigation of the stomach in such cases is like washing out an abscess cavity, and is quickly followed by good results.

Clinical and Therapeutical Observations concerning Measles.—Montefusco ("Rev. mens. des mal. de l'enfance," August, 1888) made observations in the course of an epidemic of measles which prevailed in Naples during portions of 1887-'88.

During the period of invasion there was observed in a number of cases the almost complete absence of fever. Some children had simple *malaise* and non-febrile catarrh of the conjunctivæ and the nasal mucous membrane. Usually the fever coincided with the appearance of the eruption. An absence of fever in the early stage seemed to have no bearing on the subsequent course of the disease. Epistaxis was of frequent occurrence during the first stage, but it was never abundant and appeared to have no particular prognostic value.

Among the different varieties of eruption, one was observed which resembled, at first sight, that of hæmorrhagic variola. This hæmorrhagic form, especially in cachectic children, has also been observed by Vogel, Rayer, Willan, and Günzburg. In two cases a persistence of the eruption was observed after the fever had disappeared. The fever disappeared on the eighth day of the eruption; the eruption disappeared from one of the patients two days later, and also from the face and body of the other, while the eruption on the limbs remained unchanged. The temperature exceeded 39° C. (102.2° F.) during the period of invasion in only a few cases. Increase of temperature was usually announced by frequent and irregular chills, though in some cases the chill was single and violent.

The fever in all cases was continuous, ceasing on the seventh or eighth day, very often when the eruption appeared. The urine was diminished in quantity, the chlorides were diminished, and the sulphates and phosphates were sometimes increased. In rare instances a small quantity of albumin was found. The most frequent complications affected the respiratory apparatus. A dry and paroxysmal cough, without expectoration, usually began on the third or fourth day of the period of invasion, dry and sibilant râles being discoverable by auscultation. Symptoms of bronchial catarrh were sometimes apparent before and sometimes simultaneously with the invasion of the measles, full development taking place in the course of the period of invasion. In such cases there was more or less abundant expectoration of mucus with moist râles. During the period of eruption the bronchial catarrh was always more diffuse and the expectoration more abundant. The latter was sometimes sero-mucous, and sometimes there were nummular sputa which were suggestive of phthisis. When the fever and the eruption disappeared there was usually a diminution in the intensity of the bronchial catarrh and the cough became less painful, and the expectoration less abundant and of a serous character. Capillary bronchitis was not infrequently a complication, and often led to fatal results by suffocation or by slow asphyxia. Frequently there were attacks of laryngitis during the period of eruption, with periods of dyspnoea, as in croup. Convulsions were of frequent occurrence, especially during the period of invasion; they occurred less frequently during the period of eruption, and never during convalescence. It was not observed that they had any harmful influence on the course and termination of the disease. Troubles in the digestive apparatus were common. During the period of invasion there was frequently vomiting of greenish mu-

cus. In two cases there were vomiting, meteorism, and diarrhœa during the period of eruption. Diarrhœa was more frequent during the invasion than the eruption, but rarely was it sufficiently severe to be looked upon as a complication. Either erythematous or ulcero-membranous stomatitis was present in almost every case. In regard to treatment, it was believed that no particular intervention was necessary in those cases which ran the regular course. To treat the fever of such a condition by seeking to remove it is irrational; the fever is not the morbid process. This does not signify that high temperature should be disregarded when it reaches such an elevation as to produce granulo-fatty degeneration of the tissues, or when it diminishes the resisting power of the patient, and produces functional troubles of the heart and brain which may lead to paralysis.

Alimentation is the treatment for such conditions, and the author regards the suggestion of Semmola and Dujardin-Beaumetz to substitute glycerin for alcohol as a very good one. Children who were treated with glycerin by the author retained their strength, showed diminished temperature, and excreted less urea. Glycerin may be administered in amounts of nearly an ounce daily, combined with about eight ounces of water and half a drachm of citric or tartaric acid.

The broncho-pulmonary complications of measles should be treated with a combination of infusion of ipecac, tincture of aconite, and syrup of *Bignonia catalpa*. Iodide of sodium diminished expectoration and respiratory frequency. If the cough was particularly rebellious the author obtained good results by giving the iodide of sodium in combination with the bromide of sodium.

The Treatment of Diphtheritic Angina by Repeated Local Applications of Concentrated Solutions of Salicylic Acid.—Ory (*ibid.*) for seven years has been using the form of treatment indicated by the title of his paper. It has generally resulted in a cure by the fifth day, and in no case which was thus treated has it been necessary to perform tracheotomy. The formula which is used by the author is the following:

R. Infus. eucalypti.....	3 oz.;
Glycerini.....	2½ dr.;
Acidi salicylici.....	4½ gr.;
Aq. laurocerasi.....	15 gr.

Applications by means of a suitable brush or swab should be made every hour during the day and every two or three hours at night. The treatment should be kept up as long as there are any diphtheritic patches in the throat. If it is objected that the author may have erred in his diagnosis and have regarded as diphtheria what was only a pul-taceous angina which would tend to recovery without any treatment at all, the reply would be that it is hardly supposable that he has constantly erred during the past seven years in diagnosing his cases. He believes that the disease begins almost always, if not always, by local manifestations on the pharynx or tonsils, and that if these are destroyed in season, general infection or even extension to the larynx may be prevented. Salicylic acid in solution or in suspension acts rapidly in destroying the false membrane without causing much irritation of the mucous membrane with which it comes in contact. Success with the treatment depends not a little upon whether the application is made boldly and thoroughly or not. The child's head and hands should be immovable, the tongue should be depressed with a finger of one of the operator's hands, and with the other the application should be quickly and thoroughly made. The spasmodic constriction of the pharynx which usually attends the operation favors the application of the medicament, and the author prefers a large dossil of charpie to absorbent cotton for carrying the salicylic acid. The physician himself should make these applications at least three times daily, and with each application he should remove as much of the false membrane as possible. The author attributes the degree of success which has attended his cases to the careful and persistent personal attention which he has bestowed upon them.

Tracheotomy for Croup, the Anæsthetic being Chloroform.—Luc ("Jour. de méd.," June 24, 1888) opens by commenting upon the operation of St. Germain, consisting in fixing the larynx between the thumb and forefinger and plunging a bistoury through all the tissues into the trachea at one stroke. This operation is a brilliant one, and cases are narrated in which it was performed and the cannula put into place in fifteen seconds. There are undoubtedly cases requiring

tracheotomy in which a few seconds mean life or death for the patient. A case is also narrated in which the patient died at once from suffocation, the cause being that the bistoury deviated from the middle line of the larynx, and, instead of dividing the lining mucous membrane of the organ, pushed it backward and thus completely stopped up the air-passage. As this is a practical point it must be duly weighed before performing St. Germain's operation, or any other by which one quickly opens the trachea, without stopping to check the hæmorrhage. The advantages of chloroform in performing this operation, as compared with no anæsthetic, or a local anæsthetic like cocaine, are thus enumerated: 1. There is an avoidance of pain which can only be appreciated by comparison with those cases in which one operates without it and with the patient in a half-asphyxiated condition. 2. The patient's agitation is relieved, and this enables one to operate with very little assistance. 3. There is a suppression of laryngeal spasm, which is often due in children to the terror produced by the operation. 4. With chloroform it is not necessary to place the head in forced extension, so that the child can breathe during the operation at least as well as before it. The cases are very few in which death is a question of minutes. 5. The child loses no blood, and, when the trachea is incised, not a drop of blood passes into the air-passages. 6. Since one can usually operate with deliberation under chloroform, it is possible to make the incision in the lower part of the neck. The further the cannula is removed from the larynx the less will be the pain in eating and the less painful the movements of flexion of the head. 7. When this operation is performed under chloroform, instead of being a blind extra-hazardous undertaking in which the operator is very apt to get nervous and excited, it becomes an ordinary surgical operation in which he sees and knows what he is doing, and can proceed with caution and calmness.

Miscellany.

The Medical Department of the National Guard of the State of New York.—The following general orders have been issued from the Adjutant-General's Office by order of the Commander-in-Chief:

1. Upon the recommendation of the Surgeon-General, persons appointed to medical offices will hereafter be examined, before being commissioned, by special boards selected by the Surgeon-General and hereby appointed: For the First Brigade: Major Robert V. McKim, Surgeon First Brigade; Major Daniel M. Stimson, Surgeon Seventh Regiment; Major Nelson H. Henry, Surgeon Twelfth Regiment. For the Second Brigade: Major George R. Fowler, Surgeon Second Brigade; Major John F. Valentine, Surgeon Thirty-second Regiment; Major William E. Spencer, Surgeon Twenty-third Regiment. For the Third Brigade: Major Herman Bendell, Surgeon Third Brigade; Major Lewis Balch, Surgeon Tenth Battalion; First Lieutenant Daniel S. Burr, Assistant Surgeon Twentieth Separate Company. For the Fourth Brigade: Major Roswell Park, Surgeon Fourth Brigade; Major Charles G. Stockton, Surgeon Seventy-fourth Regiment; Major Albert H. Briggs, Surgeon Sixty-fifth Regiment.

Returns of appointments of medical officers will be referred by the commanding officers of brigades to the boards appointed for their respective commands, and all concerned will be governed by the rules prescribed in General Orders No. 14, series 1887, from this office, so far as the same are applicable.

2. Appointees to medical offices shall be further examined in the standard branches taught in legally incorporated medical schools; the diagnosis and treatment of injuries and diseases to which troops may be exposed; the means employed for the urgent relief, and for the transportation, of sick and wounded, including stretcher drill (see provisional manual of instruction U. S. A.); camp and personal hygiene; and as to their knowledge of official papers relating to their department.

3. It appearing that there are hospital stewards who are not qualified, according to the laws of the State, to perform the duties required of them, commanding officers are directed to discharge such from the

service at once. Hospital stewards should have passed an examination before the State or County Boards of Pharmacy, and have received licenses as pharmacists.

A Sanitary Convention will be held at Hastings, Mich., under the auspices of the State Board of Health, on Monday and Tuesday, December 3 and 4, 1888. The following addresses and subjects to be discussed, are included in the programme:

A brief statement of the objects of the convention, by Hon. John Avery, President of the State Board of Health. Address by the President of the Convention, Hon. D. R. Cook. "The Water-supply of Hastings"; "Plats of Localities in Hastings"; "Disposal of Excreta and Waste in Hastings"; "Ventilation and Heating"; "Prevention of Communicable Diseases"; "The Germ Army—How it may be Routed"; "Duties of the Local Health Officer"; "School Hygiene"; "Prevention of Insanity"; "Prevention of the Diseases of the Eye and Ear"; "Food and its Adulterations"; "Degenerations of Age"; an address by Professor Vaughan, of the University.

Information in regard to the convention may be obtained by addressing Mr. A. E. Kenaston, Secretary, Hastings, Mich.

The Health of Michigan.—According to the State Board of Health's summary of returns for the month of August (the five weeks ending September 1st), that, as compared with the same month in the preceding nine years, there was no disease more than usually prevalent, while intermittent fever, cholera morbus, whooping-cough, remittent fever, diphtheria, amygdalitis, cholera infantum, typho-malarial fever, influenza, and diarrhœa were less prevalent.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending September 14th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 25th corresponded to an annual rate of 18.1 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 11.5, and the highest in Wolverhampton, viz., 28.7 in a thousand. Small-pox caused 1 death in Oldham and 1 in Nottingham. Diphtheria caused 3 deaths in Manchester.

London.—One thousand four hundred and thirty-eight deaths were registered during the week, including measles, 47; scarlet fever, 21; diphtheria, 17; whooping-cough, 28; enteric fever, 7; diarrhœa and dysentery, 192; simple cholera and choleraic diarrhœa, 7. Diseases of the respiratory organs caused 172 deaths; different forms of violence, 47; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 17.5 in a thousand. In greater London 1,821 deaths were registered, corresponding to an annual rate of 17.2 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 58; diphtheria, 8; and measles, 13.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending August 25th in the sixteen principal town districts of Ireland was 17.5 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4.8, and the highest in Wexford, viz., 29.9 in a thousand. In Dublin 121 deaths were registered, including measles, 3; enteric fever, 2; scarlet fever, 1; diarrhœa, 4.

Scotland.—The deaths registered in eight principal towns during the week ending August 25th corresponded to an annual rate of 16.7 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Aberdeen, viz., 13.5, and the highest in Paisley, viz., 21.1 in a thousand. The aggregate number of deaths registered from all causes was 421, including measles, 5; scarlet fever, 4; diphtheria, 3; whooping-cough, 4; fever, 10; and diarrhœa, 16.

Hobart Town, Tasmania.—One hundred and sixty-seven deaths were registered during the quarter ending June 30, 1888, including 12 from enteric fever.

Martinique.—The United States consul, in his dispatch dated August 29th, states that "in the fortnight preceding the 25th of this month there were in all 99 cases and 22 deaths from small-pox in the interior

of the island, and that prior to the 12th of August there were 3 sporadic cases of yellow fever and 2 deaths therefrom."

Cardenas, Cuba.—The consular report dated August 31st states: "Good health in town and harbor. Weather dry and hot. Only one American vessel in port."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	August 18.	2,260,945	869	..	..	2	..	8	5	24
Paris	August 25.	2,260,945	910	..	..	1	..	11	3	25
Glasgow	August 25.	545,678	190	..	..	..	..	3	1	1
Warsaw	August 18.	441,814	273	..	..	11	..	..	10	8
Calcutta	July 28.	433,219	169	15	..	..	..	..	..	..
Rome	July 21.	391,188	199	..	..	..	..	4	..	..
Amsterdam	August 25.	389,916	153	..	..	..	..	3	..	..
Munich	July 21.	275,000	150	..	..	..	..	1	1	2
Munich	August 11.	275,000	187	..	..	..	..	..	1	..
Palermo	August 18.	250,000	84	..	..	..	..	..	3	1
Palermo	August 27.	250,000	78	..	..	..	..	..	..	1
Belfast	August 25.	227,022	74	..	..	..	..	..	1	5
Bristol	August 18.	226,510	58	..	..	..	..	..	2	..
Bristol	August 25.	226,510	50	..	..	..	..	..	..	..
Genoa	August 18.	179,720	86	..	..	2	..	..	..	1
Genoa	August 25.	179,698	87	..	..	1	..	..	..	..
Trinidad	August 11.	178,270	42	..	..	..	..	..	..	..
Trinidad	August 18.	178,270	32	..	..	..	..	..	..	..
Leipsic	August 25.	170,000	87	..	..	..	..	..	1	2
Trieste	August 18.	154,500	75	..	..	5	..	..	1	..
Toronto	August 24.	130,000	26	..	..	..	..	1	..	..
Toronto	August 31.	130,000	31	..	..	..	..	..	..	..
Stuttgart	August 25.	125,500	45	..	..	..	..	..	..	..
Bremen	August 18.	122,000	30	..	..	..	..	..	..	2
Havre	August 18.	112,074	102	..	..	..	..	21	1	1
Havre	August 25.	112,074	89	..	..	..	..	17	1	..
Barmen	August 25.	109,000	40	..	..	1	..	..	..	..
Leghorn	August 19.	101,854	37	..	..	..	..	..	..	..
Leghorn	August 26.	101,854	36	..	..	..	..	..	..	..
Mayence	August 4.	65,802	23	..	..	..	..	..	..	..
Mayence	August 11.	65,802	27	..	..	..	..	..	..	..
Cadiz	August 25.	65,028	34	..	..	..	..	..	..	..
Curacao	Sept. 1.	25,000	5	..	..	..	..	..	..	..
Vera Cruz	August 30.	23,800	22	..	..	..	..	..	..	..
Gibraltar	August 19.	23,634	9	..	..	..	..	1	..	1
Kingston, Can	Sept. 7.	16,216	3	..	..	..	..	..	..	..
Antigua	August 19.	15,347	26	..	..	..	..	..	..	..
Antigua	August 26.	15,347	24	..	..	..	..	..	..	..
Bermuda	Sept. 6.	15,260	7	..	..	..	..	..	..	..
Cartagena, Col'a	August 4.	13,000	16	..	..	..	..	..	..	..
Cartagena, Col'a	August 11.	13,000	5	..	..	..	..	..	..	..
Matamoros	August 18.	12,000	8	..	..	..	..	..	..	..
Matamoros	August 25.	12,000	7	..	..	..	..	..	..	..
Laguayra	August 25.	7,428	4	..	..	..	..	..	..	..
Laguayra	Sept. 1.	7,428	3	..	..	..	..	..	..	..
Turk's Islands	August 15.	5,000	5	..	..	..	..	..	..	..
Turk's Islands	August 22.	5,000	6	..	..	..	..	..	..	..
San Juan del Norte	August 13.	500	1	..	..	..	..	..	..	..
San Juan del Norte	August 16.	500	1	..	..	..	..	..	..	..

UNITED STATES.

Lake City, Fla.—Dr. J. L. Posey arrived at Lake City August 23d, and in his report to the Supervising Surgeon-General, dated September 1, 1888, states that—

Lake City is the county seat of Columbia County, situated in Middle Florida, with an elevation of 250 feet above sea-level. The city covers an area of half a mile square, its center rising to an elevation of 17 feet and sloping from east to west, with an average fall of 5 feet, giving an almost perfect natural surface drainage, the water being rapidly carried off after the heaviest rainfalls, which are of rare occurrence in this locality. There are three small fresh-water lakes in the immediate vicinity of the city—viz., Lake Hamburg in the southwest, Lake De Soto east, and Lake Isabella, the largest and prettiest of the trio, southeast of the city. The latter named is about a mile wide and of considerable depth, and is the source whence the city derives its water-supply for public uses. The water almost exclusively used for drinking purposes is supplied by wells, which yield an abundance of clear cool water at a depth of from 20 to 30 feet. I visited the city water works recently erected, located on the shore of Lake Isabella, and examined the large cemented brick reservoir, into which the water is first pumped from the lake, and, after filtering through a bed of charcoal, is forced into a wooden tank elevated at a considerable height, and thence distributed through iron mains to hydrants placed 210 feet apart. The water of Lake Isabella is clear, cool spring-water, odorless, tasteless, and apparently free from organic matter. Mr. Collins, the president of the water-works company, informed me that an analysis

had been made by a competent chemist, and the water found free from organic matter. I deem it perfectly wholesome and fit for drinking purposes.

A general and thorough inspection and survey of Lake City revealed an excellent sanitary condition of its streets and drains, as also of the premises. The municipal health board had just completed a general cleaning and disinfection of the closets, which are open and on the surface of the soil, which is a sandy loam with a substratum of clay. The fecal accumulations were removed beyond the corporate limits and put into a large trench, being thoroughly disinfected with lime. The garbage from premises and streets likewise removed beyond the corporate limits, and, after saturation with resinous matter, entirely burned.

The quarantine measures established against infected points (this city being only 60 miles by rail north from Jacksonville) are efficient and stringent, and are rigidly enforced by the city board, composed of gentlemen of intelligence and ability, who are deeply impressed with the conviction that the only means of escaping an invasion of yellow fever is by maintaining a strictly military quarantine. In addition to these measures, a weekly house-to-house inspection has been ordered, to compel residents to preserve the present fine sanitary condition of the city. They are required to disinfect their closets once or twice a week with a saturated solution of sulphate of iron and carbolic acid.

At the date of my inspection I met the president of the city health board and the principal physicians practicing there, and was afforded every facility for making a complete investigation of its sanitary state. They all assured me that there was not at that time, or had been previous, a single case of yellow fever, or any case that they deemed suspicious—in fact, not even a case of any type of malarial disease.

A type of malarial remittent fever prevails in some of the alluvial lands, which the natives call "yellow disease," and which is an aggravated form of hæmaturia, usually fatal, and occurring in persons who have been the subjects of repeated attacks of intermittent fever, who have become cachectic and leucocythæmic.

I subjoin a few notes giving the data requested in your letter of instructions:

Name of Mayor of Lake City, W. R. Bush. Health Officer, Dr. D. A. Watts. Water-supply, well-water and lake-water. Disposal of sewage, surface drainage. Burial permits, none issued. Distance of cemetery from business center, half a mile; mode of interment, six feet below surface. Number of deaths from May 1 to October 1, 1887, 8; number of deaths from May 1 to August 24, 1888, 5—total, 13. Population (white and colored) estimated at 2,000.

In conclusion, I desire to state that, from the conditions of soil, elevation, and general cleanliness of Lake City, I am of the opinion that the occurrence of a case of yellow fever in its limits would, upon immediate isolation, fail to establish a focus for the development of an epidemic atmosphere or rapid spread of the specific infecting matter of yellow fever. The statements of the oldest resident practitioners and other residents tend to corroborate this view, as 2 cases of yellow fever occurred in 1876 in the city, which were clearly traced to importation, both cases resulting in recovery and no other cases developing from them. During a period of twenty-five years there has not been an epidemic of any disease prevailing in Lake City. A few cases of cholera occurred in 1867, without any tendency to develop an epidemic. In face of such a health record, I entertain the firm conviction that this charming City of the Lakes is justly entitled to be ranked as one of the most salubrious of the cities of Middle Florida. The average temperature, I think, is about 75° F.; the nights and mornings, at the time of my visit, delightfully cool and invigorating, and, during the noon and afternoon, cool, balmy breezes sweep over its richly wooded hills of pine, oak, and magnolia. I submit this brief sketch of the sanitary conditions of the attractive City of the Lakes as the result of close personal observation and thorough inspection of its situation and surroundings.

Tampa, Fla.—Dr. J. P. Wall telegraphed as follows:

September 8th: "Three cases reported to-day, making 7 since last report. It continues mild. No deaths."

September 9th: "One new case here. No deaths."

Manatee, Fla.—Dr. M. B. Harrison reports for the week ending September 7th: "Three new cases for Manatee, and 2 for Palmetto—total, 51. No deaths."

Jacksonville, Fla.—Dr. Neal Mitchell, president of the Board of Health, telegraphed as follows:

September 9th: "For twenty-four hours ending 6 P. M.: New cases, 49; deaths, 7. Total number of cases to date, 604; total number of deaths to date, 73."

September 10th: "For twenty-four hours ending 6 P. M.: New cases, 32; deaths, 5. Total number of cases to date, 636; total number of deaths to date, 78."

September 11th: "For twenty-four hours ending 6 P. M.; New cases, 48; deaths, 11. Total number of cases to date, 684; total number of deaths to date, 90."

September 12th: "For twenty-four hours ending 6 P. M.: New cases, 59; deaths, 10. Total number of cases to date, 743; total number of deaths to date, 100."

September 13th: "For twenty-four hours ending 6 P. M.: New cases, 44; deaths, 4. Total number of cases to date, 785; total number of deaths to date, 104."

Camp Perry, Fla.—The Secretary of the Treasury has received the following telegrams from Supervising Surgeon-General Hamilton:

September 10th: "Arrived to-day, 1 P. M. Refugees in camp, 132; in fever hospital, 4. Died at fever hospital, 1. Four officers present."

September 12th: "Morning report: Officers, 5; guards, 7; employees, including carpenters, 59. Refugees received, 16; discharged, 64; remaining, 86. In fever camp, 6 patients."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
New York, N. Y.	Sept. 8.	1,534,676	716	1	17	19	18	8	23		
Chicago, Ill.	Sept. 8.	800,000	291		14	2	19	1	4		
Baltimore, Md.	Sept. 8.	431,879	177		9	1	3		3		
Boston, Mass.	Sept. 8.	415,000	175		2	1	5				
San Francisco, Cal.	August 31.	330,000	114		1	2					
Cincinnati, O.	Sept. 8.	255,139	93		3	1			3		
New Orleans, La.	Sept. 1.	248,000	114		2	10			1		
Pittsburgh, Pa.	Sept. 8.	230,000	70		7	1	5		2		
Washington, D. C.	Sept. 8.	225,000	83		3	1			7		
Milwaukee, Wis.	Sept. 8.	195,000	82		1				3		
Minneapolis, Minn.	Sept. 7.	180,000	48		1	1					
Kansas City, Mo.	Sept. 8.	180,000	38		5	1					
St. Paul, Minn.	Sept. 8.	175,000	41		9	2					
Rochester, N. Y.	Sept. 8.	120,000	47		3	1					
Detroit, Mich.	Sept. 7.	116,340	47		4	1	2		2		
Denver, Col.	Sept. 7.	96,000	37		7	1	2				
Columbus, Ohio	Sept. 8.	93,000	30		4						
New Haven, Conn.	Sept. 8.	82,000	21		2						
Toledo, Ohio	Sept. 8.	80,000	20								
Nashville, Tenn.	Sept. 8.	65,153	19		1						
Fall River, Mass.	Sept. 8.	65,000	24		2						
Charleston, S. C.	Sept. 8.	60,145	43		1						
Cambridge, Mass.	Sept. 8.	59,660	34		1	1			3		
Evansville, Ind.	Sept. 6.	53,000	21		1						
Savannah, Ga.	Sept. 7.	52,827	21								
Lynn, Mass.	Sept. 8.	50,000	18								
Mobile, Ala.	Sept. 8.	40,000	13								
Galveston, Tex.	August 31.	40,000	12								
Portland, Me.	Sept. 8.	40,000	12								
E. Saginaw, Mich.	Sept. 8.	33,000	16								
Davenport, Ia.	Sept. 8.	30,084	6								
Altoona, Pa.	Sept. 1.	29,546	14		1						
Salem, Mass.	Sept. 8.	29,000	15								
New Albany, Ind.	Sept. 8.	28,689	11		1	2					
Yonkers, N. Y.	Sept. 10.	28,000	9								
New Bedford, Mass.	Sept. 8.	26,845	13								
Auburn, N. Y.	Sept. 1.	26,000	9								
Auburn, N. Y.	Sept. 8.	26,000	5								
Haverhill, Mass.	Sept. 8.	25,000	4								
Jackson, Mich.	Sept. 8.	22,500	7								
Newton, Mass.	Sept. 8.	21,105	5								
Poughkeepsie, N. Y.	Sept. 8.	21,000	16						1	1	
Newport, R. I.	Sept. 6.	20,466	4								
N. Brunswick, N. J.	Sept. 8.	20,000									

The Intercolonial Medical Congress of Australia.—The second session will be held in Melbourne, January 7 to 12, 1889. The sections comprise medicine, of which the Hon. Charles Kinnaird Mackellar, M. B., of Sydney, is president; surgery, Edward Charles Stirling, M. A., M. D., of Adelaide, president; hygiene, forensic and state medicine, Henry Norman MacLaurin, M. A., M. D., of Sydney, president; anatomy and physiology, Professor T. P. Anderson Stuart, M. D., of Sydney, president; pathology, Joseph Bancroft, M. D., of Brisbane, president; obstetrics and gynecology, Ferdinand Campion Batchelor, M. D., of Brisbane, president; diseases of the eye, ear, and throat, Mark John-

ston Symonds, M. D., of Adelaide, president; psychological medicine, Frederick Norton Manning, M. D., of Sydney, president; and pathology, Baron Sir Ferdinand von Mueller, M. D., president. There will also be a sub-section in diseases of the skin, and one in diseases of children. The governors of the Australasian colonies have consented to act as patrons of the congress. One of the most important features of the congress is the proposal to hold special general meetings at which subjects of general interest—such as the climates of Australia, colonial fevers, etc.—will be discussed. The organizing of a congress museum is also proposed. The meeting promises to be of much interest and importance to the Australasian colonies. Accredited members of the American profession who visit Australia are assured a hearty welcome, and will be invited to participate in the work of the congress.

ANSWERS TO CORRESPONDENTS.

No. 225.—It would not be possible to give a satisfactory reply within the space allotted in this department. We therefore refer you to Pepper's "System of Medicine." It is a well-known fact that the disease is fatal in cattle and that it is usually due to some substance that they have eaten.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE ENGADINE AND DAVOS.*

By D. B. ST. JOHN ROOSA, M. D., LL. D.

DURING the last summer I have had an opportunity of revisiting the famous Engadine valley, and also to see for the first time Davos and Wiesen. As this society well knows, much has been written, both in England and in this country, upon these high health resorts, especially as to the fitness of an abode in them by consumptives during the winter. On the question as to whether places of great altitude are suitable and recuperative for phthisical subjects I shall have nothing to say, for I have no especial experience that fits me for any expression of opinion upon this point. All I shall attempt to do is to make some remarks, founded upon observation, as to what may be actually found in the way of air, food and drink, living accommodations, and so forth, by those who are sent to the Engadine and the contiguous regions in summer or winter. Such remarks may possibly be of some service to those physicians who, while well acquainted with the claims made for great altitudes and so-called aseptic air for their patients, do not know by actual visitation what is to be found in the details of living.

A journey across the Atlantic is only the beginning of the long journey to the Engadine or Davos. Yet many Americans, if they become invalided, for various reasons prefer to go to Europe than to Colorado or California. One reason for this is to be found in the fact that they believe that, after the tedious journey is over, the older civilization will make them more comfortable in such matters as a bed and room, places to walk and sit, and food, than will the younger one in our own country. It seems to be a fact that European hotel-keepers are more eager to meet and less impatient to fill the little wants of invalids, or even of ordinary travelers, than are the same class in America; hence European hotels are generally more comfortable than those of America. I am often surprised at the hap-hazard way in which invalids are sent across the ocean, and at the very inadequate preparations that are made by them, and by delicate persons generally, for the passage. There is really no place where more care is needed to secure proper food and to wear proper clothing than upon the ocean. A voyage across the Atlantic is not of necessity a health-giving process. To nervous, jaded people, overlaid by cares at home, it generally is; but a person with a cough, or one who is inclined to be constipated, or a dyspeptic, may pass off the steamer, unless great care be taken, worse than when he went upon it. In the summer-time steamers are now so crowded that the opportunities for fresh air even on deck have become limited, while for exercise there are on many vessels none at all. But in the autumn or winter these conditions are improved, and then the passages are rough. In spite of the landsman's tradition that one never takes cold

at sea, it is an uncommonly good place for an attack of coryza, tonsillitis, and bronchitis. Invalids starting for a foreign health resort need as careful advice for the steamer journey as for their abode at their destination. They who get it from the surgeon of the vessel are few. One reason is that they scarcely ever ask for it, and another that the medical officers are not always men of experience enough to properly advise the passengers. An invalid or delicate person at sea should have the daily care of the surgeon, who ought to see that such passengers are fed with system and care. No happy-go-lucky belief that all will go well if they simply breathe the salt air should be encouraged. I know of but few more oppressive places than state-rooms in which the ports are not very often opened, and overcrowded cabins of large steamers.

Once on the coast of Germany, Holland, or France, in Bremen, Rotterdam, Antwerp, or Havre, the invalid will have a long railway journey before him, which should certainly be broken, for only under exceptional circumstances or at great expense, such as is incurred by hiring a *coupé lit* or berth in the few Pullman cars, can accommodations equal to those easily obtained in the United States be found. I refer chiefly to the absence of cabinet and lavatory arrangements in the railway carriages. It is only rarely that they are found. Their absence is a great evil even to well persons, who can jump from a train when it stops five minutes, and run an eighth of a mile to empty their bladders; but what is this abominable system to delicate men and women and those traveling with young children? I have seen a lady, at last forced to it by the long journey without an adequate halt, hold her little boy up to the window and allow him to urinate in sight of the crowded *coupé*, much to her mortification. Many more distressing scenes than this constantly occur. The danger of murder in the English and French railway carriages is one that experience shows is not entirely without foundation, and yet the British and Continental railway authorities move very slowly in the reform of their carriages.

If the Engadine be approached from the Swiss side it will probably be from Chur (Coire), about twenty-six to thirty hours from the coast. Here good carriages may always be obtained. But the trip, which is one continual ascent, should not be made in one day, although the longest route to the Engadine is only from fifty to sixty miles. The average American wit and caution should be used in selecting a driver and a carriage. The sleeping accommodations, even in very humble and remote places, in Switzerland are exceedingly good. A clean and soft bed, and nutritious food, generally well cooked, are almost always to be obtained. The routes from Coire to the Engadine or Davos are no exception to this. I will not break the continuity of my paper by asking if these things are to be found, as a rule, outside of the great cities in our own country.

The Engadine, with its history and the character of its inhabitants, has much to interest us aside from its fame as a health resort. The Germans were the first to utilize the valley as a curative place for consumptives, although the question of the suitability of high altitudes for them is by

* Read before the American Climatological Association at its fifth annual meeting, September, 1888.

no means a new one. Dr. Tucker Wise* shows that here also the practical wisdom of our time was foreshadowed by the older writers. Dr. Bodington, of Warwickshire, forty-five years ago, said: "To live in and breathe freely the open air without being deterred by the wind or weather is one important and essential remedy in arresting the progress of phthisis. . . . The cooler the air which passes into the patient's lungs, the greater will be the benefit the patient will derive." Dr. Bodington called cold, pure air a sedative to the lungs. I suppose the writers of the present day are a little more specific when they claim that it is *aseptic*, or that it has germ-destroying qualities.

The Engadine valley, as is well known, is a small one—about sixty miles long and about a mile wide. There is scarcely any agriculture. The Alpine grass is all that can be cultivated. The larch and the pine grow upon the lower parts of the mountain. The clearness and apparent purity of the atmosphere in summer would strike even a careless observer. It is a joy to exercise in it. But the Engadine is usually cool and often cold even in July, and very cold in winter. To use an old quotation of mine from a witty French woman, whom I saw at St. Moritz two years ago, "You can walk in the Engadine but you can not sit down." The various places in which invalids congregate in this region—St. Moritz, the Maloya, Samaden, Pontresina, and Davos and Wiesen, on the other side of the valley—are well provided with the facilities for sitting down by the wayside, as they are with many other conveniences for invalids. To this there is one exception in the summer-time, at least; I found but in one place, and that the Hotel Maloya, anything adequate for keeping one's self comfortably warm in the house. The guests of the hotels went about with overcoats, and even men sometimes dined at the *table d'hôte* with shawls over their shoulders. Since St. Moritz is more than six thousand feet above the sea, and Davos nearly five thousand, there must be many cold days in summer even when the sun is fully out. In summers like those of 1886 and 1888 no invalid—indeed, no person of average health—could be comfortable in the reading-rooms or drawing-rooms of the hotels for much of the time unless wrapped in furs. To secure a fire in one's bedroom, except in two of the hotels in St. Moritz Baths, was not difficult. The rooms are heated by iron stoves, constructed on the vicious principle of radiating sufficient heat about an hour or so after they are heated by a small wood fire. This works fairly well in porcelain stoves such as are used in North Germany, but I have never seen it do very well in those immense iron cylinders in vogue in other parts of Continental Europe. One hotel in Davos has a few open fires, and I saw an American coal-stove in a dining-room of another hotel in the same place. The hotel proprietors in Europe, as in America, are very reluctant to admit that a public room needs a fire in the summer, although they are often the losers, in consequence of their unwillingness to keep them warm, in the short residence and early departure of their guests. Inasmuch as invalids can not always be in the open air or go to bed directly they are in-

doors, this failure to keep a comfortable temperature is very trying. In the hotel at Maloya there is a system of heating that I found very pleasant in the three days I was there in August. One of these days there was a snow-storm. The outside air is warmed by passing over steam-pipes, and then by a system of registers is let on or shut off in the various rooms.

It is not, however, in summer that the question of life in the Engadine or Davos is of the most importance. Although many invalids stay there all the year round, they are chiefly important as health resorts in the winter. The Engadine, however, is crowded with wealthy and fashionable people in the summer. It is the *mode* to go there to stay a few weeks, especially among the English and the Anglo-maniacs. The former are so accustomed to fog, rain, and cold that I do not wonder, with their aptitude for walking, that they put the clear sky of this region and its invigorating air high up in the scale of pleasure as well as health resorts. The waters of St. Moritz have no very great therapeutic value, I fancy. They are predominantly iron, apparently not so much impregnated as many others in Europe and our own country. Pontresina has no waters and few attractions except to Alpine climbers and hale pedestrians, and yet it is so crowded in summer by many people who can not be said to belong to either class that rooms are not easily obtained unless by writing long in advance. The village is small, its streets narrow, and they are redolent with the very prevalent Swiss odor in small villages, that of manure. The hotels, except one, are badly situated. Yet a good deal of what the French and Italians are so fond of calling English and American *high life* fills Pontresina. Although there are two glaciers and no end of Alpine meadow at Pontresina, it is hard to conceive how the Maloya, with its free expanse of unoccupied territory and its excellent and well-situated hotel, remains half filled, and even then with some impatient people waiting for poor rooms in the gorge-like streets of little Pontresina.

Some people find all ascents, even going up stairs, noticeably more difficult in the Engadine than in ordinarily situated places. Usually only the extreme clearness and purity of the atmosphere are perceived, even on first arriving. It should always be remembered that life in the Engadine is about 6,000 feet above the sea, and that not every invalid or even healthy person can tolerate it. An old American gentleman died at one of the hotels, just before I arrived, of cerebral hæmorrhage. His physician told me that he thought that death had been precipitated by his visit to such a region. It is certainly manifestly unfit for persons of full habit and with very weak hearts or weak blood-vessels. Certainly patients should not be sent off to the Engadine by physicians without some consideration.

Davos, so famous in our time, is situated in what Bader calls a *district* of that name in the same canton with the Engadine valley, and was until within a few years so isolated that the guides used to speak of it as a place in which no foreign foot ever trod. The inhabitants generally state that no one born in Davos ever had consumption, but, of course, it is impossible to verify such a statement as this. The district is also a high valley, but only eight

* "Alpine Winter in its Medical Aspects."

miles long and half a mile broad. It is remarkably well sheltered by high mountains, and must be freer from wind than the Engadine. The growth of small pines is profuse and beautiful. It is a thousand feet or so lower than St. Moritz or the Maloya. It is a charming region, the air being apparently as clear and as aseptic as that of its higher neighbor. Davos place and Davos village are about a mile from each other theoretically. They almost connect, however, and the two places are rather thickly populated if, as I was told, there are two thousand invalids there in winter, besides their attendants and the inhabitants of the very small villages around which the hotels have been built. At St. Moritz village there are about two hundred invalids at the most in the hotels, and at Maloya fifty, in one. The baths at St. Moritz, a mile from the village, are closed in summer. It is evident that the large population in Davos may become a source of danger, as in Pontresina in summer. Yet I have a belief that the watchful Englishman to whom we are indebted for the great improvements in water-closets and urinals throughout the continent of Europe will see to it that the sewage does not contaminate the water, and that the closets are flushed. There is much reckless behavior by Americans, sick and well, in many of their habits, and some of it consists in their drinking water in all kinds of places with no inquiry as to its source or liability to contamination.

Teetotal principles are at the bottom of some of this lack of wisdom. To those who have conscientious scruples against wine, tea and coffee and natural mineral waters furnish a resource. There are about a dozen hotels in Davos Platz and two or three in Davos village, all in the space of about two miles in length and half a mile in width. The closets of the various hotels are generally of an approved variety and are kept in order. The water-supply is apparently not contaminated. The milk furnished at Davos is of excellent quality. Watered milk and a queer-tasting white fluid sold for milk are not uncommon in British and Continental Europe. On the Isle of Wight, especially at Ventnor, where is the hospital for consumptives, at Davos, at Maloya, milk may readily be had as good as that of the Echo Farm and other famous places in America. The food furnished at the *table d'hôte* breakfasts and dinners in many of the hotels is not nourishing enough, although the courses are sufficiently numerous, for an invalid or delicate person, and I would advise such persons to see to it that they have an honest beefsteak or a large slice of beef or mutton in addition to the thin soup, the inch of dry beef or veal, and half a leg of chicken that go so far to make up a Swiss *table d'hôte* dinner. This can always be had by paying a very little extra or by dining or lunching by one's self *à la carte*. Board is not high in Davos. I have before me a card of one of the hotels frequented chiefly by English and Americans. A room and board, breakfast (coffee and rolls), dinner, and supper may be had at from 6 to 12 francs a day, according to the location of the rooms. Milk and wine are extra. The latter is also good and cheap. There are donkeys and bath chairs and horses and carriages at reasonable rates, and no end of tobogganing in winter. Indeed, all the active invalids are said to spend all their waking hours, except when

eating, in the latter employment. One end of the town is devoted to the Anglo-Saxon, since only English and Americans live there, while in the other live those whom the Briton, no matter in what country he may happen to be domiciled, speaks of as foreigners. They are Swiss, German, Dutch, and French, with now and then a brave American who speaks one language besides his mother tongue, and who does not like the English to the exclusion of all others.

Wiesen, twelve miles below Davos, should have at least a word in an article on the high health resorts of Switzerland. It is hardly a village, but it has two pleasant hotels situated beautifully on the sunny south slope of a very high mountain. The place itself is more than 4,500 feet above the sea. Like Davos, it is well sheltered from the winds. Beneath it is a beautiful and rapid stream of water. It is recommended by Dr. Wise, of Maloya, as an excellent stopping-place for those leaving the higher lands in the spring. It has, however, intrinsic qualities in beauty of situation that make it apparently very desirable for a consumptive's winter or summer abode.

There are many other things observed, even by one who can not lay any claim to give expert testimony on high health resorts for consumptives, that might be narrated, but perhaps what I have been kindly allowed to say to you may supplement more recondite experiences, and turn the attention of the society to a study for themselves of the authorities who treat more exhaustively of the effects of great altitudes upon diseases of the chest. It ought also to be noted that pernicious malarial infection, or chronic malaria, would without doubt find a cure in the Engadine or Davos. But this may be obtained much nearer home, in many of the counties of New York State, such as Sullivan, Delaware, and Otsego. I met a young American physician at Samaden suffering from the effects of Chagres fever, who had been advised to go to Davos, and I afterward saw him at the latter place, much improved in a few days. He assured me that the profession at home would still welcome notes on these regions.

In visiting these places, a very natural inquiry occurs to every professional mind: Do patients actually recover from tuberculosis by living in them? Certainly a summer visitor can not answer such a question, and perhaps no one but a resident physician of a judicial and conservative temperament can ever do so, and he only by a ripe experience and careful record of his cases. But, on superficial observation, this much seems to be shown: life is made much more comfortable and is prolonged to many by an abode in these altitudes. A few are cured of something, and become well enough to go home and live out their days. A frail, coughing young lady, with a hectic flush, said to me: "I have lived here three years; I am no better, but I am no worse, and I am happy." In Davos, St. Moritz, and the Maloya the invalids and their friends form a happy family. Even a young man without acquaintances soon becomes at home and shares in the common interests. Everything centers about the invalid; all is done to prolong and save his life. The tone of the little society is a cheerful one. Not many deaths occur, since advanced cases rarely go to the Engadine

or Davos. Altogether the exile, although an exile, is a happy one, so sweet is life and the hope of life to the human heart.

LOCALIZED PERITONITIS

AS A FACTOR IN DISEASE OF THE ABDOMINAL VISCERA.

By HENRY C. COE, M. D.

It can not be denied that, with the aid of modern appliances and guided by the recorded results of numerous scientific observers, an accuracy in diagnosis has been attained which a few years ago would have seemed almost incredible. Familiarity with the appearance and relations of the healthy and diseased abdominal viscera, as exposed by the laparotomist, as well as at the post-mortem table, has led to more positive knowledge regarding the significance of certain signs and symptoms which were formerly obscure. But, with all their acumen, it frequently happens that the most accomplished diagnosticians fail to recognize the exact character of gross lesions in patients who have been under constant observation in hospitals, where the slightest symptom is carefully noted. Only a pure pathologist, who has never left the laboratory for the bedside, would be so unjust as to reproach the clinical observer for the incompleteness of his diagnosis in a complicated case. Nothing is easier than the elucidation of symptoms—after the autopsy.

If the exact explanation of symptoms during life is difficult, how much more difficult it is to trace organic disease of a viscus to a local cause, perhaps situated at a distance from it! Yet, practically, success in the treatment of morbid conditions is measured by the proper appreciation of their ætiology. Daily experience demonstrates the truth of Flint's assertion that "a diagnosis not based on adequate pathological information is always open to more or less of the chances of error which pertain to guessing."

The writer desires to call attention in this brief paper to a potent cause of disease which is not very rare and yet is seldom clearly recognized during life. The condition may be regarded by some readers as merely an anatomical curiosity, lying beyond the sphere of the diagnostician as well as of the surgeon's knife; yet surgery has pushed its way farther and farther into the domain of medicine, the old mutual distrust between the pure physician and surgeon is fast disappearing, and in the future to the combined wisdom of one and the technical skill of the other nothing may be impossible.

We often find in the dead subject slight peritoneal adhesions, which may have given rise to no definite symptom during life, and are usually regarded as but little more significant than similar localized adhesions in the thorax. But in their importance there is really no comparison between the two. Peritoneal adhesions may be so slight as to exercise no traction upon adjacent organs, but in regions so filled with vessels and ducts as the abdominal and pelvic cavities, a cicatricial nodule not larger than a marble may exert permanent pressure which will lead directly to fatal disease in a distant organ. Or circumvisceral adhesions, which are harmless so long as there is no disturbance of function in an organ, become the source of imminent danger when the latter,

from any cause, is suddenly congested or displaced. Witness the not infrequent cases of intestinal obstruction in consequence of the sudden distension of an imprisoned but otherwise healthy coil of intestine. Since this discussion bears upon affections of the abdominal viscera, due to localized peritonitis, we are not concerned with the effects of such indurations upon the pelvic organs, although the inflammatory process may be located in close proximity to them. The ureters are most apt to be occluded by the pressure of pelvic exudations or indurations, as will be shown subsequently.

The most frequent conditions traceable directly to the mechanical pressure or traction of slight indurations or bands, as observed by the writer, have been pyelitis and pyonephrosis, intestinal obstruction, and rarely ascites. Circumscribed peritonitis (not associated with cancer or tuberculosis) in the immediate vicinity of the liver and spleen is usually a concomitant rather than a cause of disease of these organs. The ureters, in their course from the brim of the pelvis to the bladder, are particularly exposed to pressure from peritoneal cicatrices, especially at the bases of the broad ligaments. This constitutes a danger from the presence of indurations in this region far more serious than the cellulitis secondary to injuries to the cervix, so feared by gynecologists. Within the past six months the writer has performed autopsies in three cases of pyonephrosis, in each of which the ureter (once the right and twice the left) was compressed and partly occluded by the pressure of such an induration. There was every indication that the condition was of long standing, and in each instance the cause was entirely unsuspected, although in one case the presence of the extremely painful induration had been recognized two years before the patient's death. It may be assumed that lesser degrees of occlusion or distortion of these ducts from a similar cause lead directly to insidious renal affections, the glandular portion, as well as the pelvis, being involved. The condition of the bladder in these cases clearly indicates that the trouble did not begin in this organ; indeed, advanced changes in the renal pelvis may co-exist with slight cystitis. The disease is of course unilateral. The change in the ureter is essentially a chronic one; instead of being extremely dilated and thin-walled, as in cases of acute obstruction (from accidental inclusion of the duct in a ligature), the increase in the size of the lumen above the point of partial obstruction is not so great, the enlargement of the ureter being mostly due to the hypertrophy of the muscular coat. Since the occlusion of the duct by surrounding adhesions takes place gradually, and is seldom complete, we should expect to meet with pyelitis and pyonephrosis more frequently than with hydronephrosis, and this is the case. The writer can recall only one instance in which the latter condition was traceable to obstruction of the ureter in consequence of localized peritonitis, and here the point of obstruction was in the upper third of its course. In all the cases of pyonephrosis, moreover, the ureter was compressed or twisted between the brim of the pelvis and the bladder, and there was every evidence, both clinical and anatomical, that the process had been a gradual one.

Intestinal obstruction is frequently due to localized peritonitis, especially that of traumatic origin, which may have been so slight as to escape recognition. Martin has recently called attention to the fact that a certain amount of aseptic peritonitis follows every ovariectomy, although it may not give rise to symptoms. Adhesions naturally result, and since the intestines lie directly in contact with the stump and the abdominal wound, they are most likely to be imprisoned. A single loop of gut may be attached by a slender band, but this is sufficient to prevent this portion of the intestine from sharing in the peristaltic movements and to constitute a source of constant pain and annoyance. There is little doubt that the colicky pains and constipation, of which many patients complain after recovery from laparotomy, are to be ascribed to slight intestinal adhesions. But the consequences may be still more serious. A loop of gut, adherent within the pelvis or to the anterior abdominal wall, may become distended with gas which accumulates in the portion above the point of attachment and causes a sharp bend in the gut, whereby the lumen is completely obstructed. Fatal results have followed from such apparently insignificant causes. The same accident may result from the adhesion of a small portion of the omentum to the subjacent intestine, or from the attachment of one loop of intestine to another loop; or a portion of the gut may slip under a band and be thus constricted. The small intestine, by reason of its situation and mobility, is, of course, most liable to contract adhesions, but obstruction of the colon by constricting bands is not unknown. The important point is that the inflammatory process which resulted in the formation of adhesions may have been so slight as to escape recognition clinically, so that we are seeking for a recent cause for the obstruction, when it is actually one of long standing. It is a curious fact that intestinal obstruction is due far more frequently to localized than to general peritonitis. It is surprising how often we find at the post-mortem the intestines fused into a solid mass by a dense inflammatory deposit, so that they are hardly distinguishable, yet there is no obstruction; or a portion of gut is buried in a cancerous mass, which, however, does not obstruct the lumen. Every laparotomist, when separating firm and extensive intestinal adhesions within the pelvis, is struck with the degree to which the gut can be imprisoned without interfering with its functions. On the other hand, a few threads of lymph attached to a single coil may cause serious disturbance, as has been shown. The difference lies entirely in the mobility of the intestine in the two cases. When it is entirely fixed, even though it is exposed to a considerable amount of pressure from inflammatory deposit or morbid growths, obstruction is less likely to occur than when it is freely movable and its wall is soft and pliable instead of being thickened by chronic inflammation. This was well illustrated in a case of laparotomy for acute obstruction at which the writer recently assisted. Although the patient had never had marked symptoms referable to malignant disease of the abdomen, carcinoma of the omentum was discovered, with old general peritonitis. The intestines were greatly distended, and, on looking for the point of obstruction, it was

found, not where the adhesions were most dense and extensive, but where the gut was least imprisoned. This fact should serve as a guide to the surgeon when searching for the cause of an acute obstruction; the chances are that it will not be in that portion of the intestine which is rendered immovable by firm adhesions.

Ascites has been mentioned as an occasional result of localized peritonitis. It is alluded to here because it might readily be attributed to visceral disease, the true cause being overlooked at the autopsy. Compression of the great vessels by old adhesions is rare as compared with occlusion of other more exposed canals. The thickness of the vessel-walls is a further protection against external pressure. The writer has observed a case in which ascites was apparently due to partial occlusion of the vena cava inferior from the pressure of a mass of indurated tissue, the result of localized inflammation, and another in which one of the great vessels was obstructed near the brim of the pelvis by surrounding adhesions. Slight and obscure as are the inflammatory processes to which reference has been made, they possess some clinical as well as pathological interest. The presence of chronic pyelitis having been positively recognized (which, by the way, requires careful observation of the patient and repeated examinations of the urine), it ought not to be difficult to exclude the more common causes of this condition—renal calculus and chronic cystitis. Remembering that the ureter is most liable to be compressed at the base of the broad ligament, the detection of a considerable induration in this region will at once suggest the possibility that the occlusion of the duct is due to it. This at once suggests an important reason for palpating the ureters in every pelvic examination (as urged by Kelly), a proceeding which has been generally regarded as of little practical value. The writer has demonstrated to his own satisfaction in three autopsies that this manœuvre would have revealed the true condition of affairs in two cases of obstruction of the ureter from peritoneal adhesions, and in one of impacted calculus. In none of the cases was the point of obstruction more than two inches from the bladder. Catheterization of the ureter, either by the touch or directly through an artificial fistula (according to the method recently elaborated by Bozeman), would afford positive information, especially when combined with vaginal palpation. The cause of acute intestinal obstruction is often unsuspected, but a careful review of the patient's history may give a clue to the true condition by indicating some former obscure abdominal trouble, which was doubtless localized peritonitis. If since this attack the patient had been troubled with constipation and frequent colicky pains, this would serve to confirm the suspicion that old adhesions existed. The fact that these symptoms dated from a previous laparotomy would, of course, render the diagnosis reasonably certain, and would also serve to locate the probable seat of obstruction. Assuming that the presence of a peritoneal adhesion has been shown, or has been strongly suspected to be the cause of a visceral affection, is it possible to remove the obstruction and to prevent its injurious effects? In view of the recent advance in pelvic and abdominal surgery, an affirmative answer may be given. In

the case of the urinary tract the prognosis may be less hopeful, but, since the changes resulting from obstruction are essentially chronic, there seems to be no reason why the diagnosis of ureteritis from this cause should not be made before the renal pelvis is affected and the obstruction be overcome by dilating the duct, as is done in stricture of any other accessible canal. In these cases the direct exposure of the opening of the ureter through an artificial vesicovaginal fistula, as practiced by Bozeman, offers a valuable means of reaching the seat of obstruction. For obvious reasons, an attempt to dissect out an indurated mass from the broad ligament after opening the abdomen will not commend itself to any one who is familiar with the anatomy of the parts and the post-mortem appearances in such cases. Such an attempt would almost certainly result in laceration of the ureter, not to speak of the injury done to other important structures in the vicinity.

The separation of intestinal adhesions by laparotomy is a rational procedure, which will doubtless be adopted still more frequently than it is at present when surgeons have learned to localize more exactly the point of obstruction. Guided by the history of the patient and the locality of the original pain, the operator will be able to determine more definitely where to seek for it. Since the adhesions are often so slight, it is evidently better to make a large incision and to remove the intestines so that they can be thoroughly inspected than to introduce one or two fingers and feel around blindly, as is sometimes the custom with the gynecologist as distinguished from the general surgeon. If the latter method is adopted, the operator may break up the extensive adhesions, and yet fail to reach the small isolated band which is really the cause of the trouble.

In conclusion, it may be stated that the recognition of the condition thus briefly described may be regarded as one of the best tests of an accomplished diagnostician.

STONE IN THE BLADDER

IN CONNECTION WITH ENLARGEMENT OF THE SPLEEN.*

By CHARLES WILLIAMS, F. R. C. S.,

SURGEON TO THE NORFOLK AND NORWICH HOSPITAL, ENGLAND.

THOMAS P., aged thirty-two, a farm laborer, was admitted into the Norfolk and Norwich Hospital under my care, March 24, 1888, suffering from a stone in the bladder. He was a short, thick-set man, having a profusion of black hair, and was fairly well nourished. When he presented himself for admission it was noticed that his conjunctivæ and eyelids were effused with blood, caused, as he informed us, by the efforts he made in straining to pass his water.

He had been an inmate in the above institution two years previously under my colleague, Sir Peter Eade. He was then the subject of inflammatory dropsy, and had a semi-mixœdematous condition of the tissues. The urine contained a large amount of albumin. The face, hands, and abdomen were œdematous. The spleen was found to be much enlarged and very hard; the liver was also enlarged. He stated that two months before this attack he had suffered from acute bronchitis, and that the

dropsical symptoms appeared about a week previous to his admission. He remained in the hospital several weeks, and when he left his health had greatly improved. The general swelling had disappeared, but the spleen was still large and the liver slightly so. The abdomen generally was hard and full.

On readmission in March of this year, he informed me that the symptoms of stone showed themselves about a year previously, and they began by a frequency of micturition, which became more urgent as time went on, and this was succeeded by an inability to retain any water, which was now constantly dribbling away; and it scalded him severely. He had noticed sand and gravel in the urine for six or seven months. Occasionally there was blood in it. About a month before admission hæmorrhage took place into the conjunctivæ and eyelids of both eyes, caused, no doubt, by the efforts made by the bladder to expel the stone rather than to expel any urine, which was not permitted to accumulate.

He had always been a most temperate man, taking occasionally mild beer, and no spirits. He had neither suffered from ague nor syphilis, nor fever of any kind. He had a good deal of color in his cheeks and lips. One could hardly imagine him to be very ill; he certainly had not the appearance of being so, although his skin generally was of a yellowish color and looked like wax. The sight was good; appetite bad; tongue pale and lightly furred. The heart-sounds were feeble but normal, the lungs resonant on percussion, but the breath-sounds coarse at the right base.

The spleen was greatly enlarged; it extended inward an inch to the right of a line drawn from the ensiform cartilage to the umbilicus, and downward two inches below the level of the navel; its surface was smooth and particularly hard. The liver was plainly felt a little below its normal line. The urine was very acid; it contained a small quantity of albumin and the specific gravity was 1.015. Œdema of the legs and feet usually made its appearance toward evening. On sounding the bladder, a hard calculus of large size was readily detected. An attempt was made to measure it; this could not be accomplished, inasmuch as the bladder was found to be firmly grasping the stone, and, as this viscus had not retained any quantity of urine for several months, it was not considered prudent to dilate suddenly with water an organ that had been so long in a contracted condition.

The general aspect of the patient and the peculiar symptoms he was laboring under made it evident enough that he was not only affected by this irritant in his vesical organ, but that he was the subject of *splenic leukæmia*. Examination of his blood showed that the leucocytes were greatly in excess of the red corpuscles. This unfortunate state of his system precluded the idea of an operation for the relief of the stone until the general condition of his health should be in a more improved state, and for the next seven weeks he underwent several kinds of medical treatment, but without any beneficial result. He now became impatient and clamorous to be relieved of the calculus, which was causing him a large amount of distress and discomfort. In the end I yielded somewhat reluctantly to his wish, as I still considered him to be in every respect a most unfavorable subject on which to perform any operation, but that, under the circumstances, litholapaxy would be, perhaps, the best and safest procedure to adopt. This was accordingly performed on the 11th of May, after he had been fully placed under the influence of ether. The stone was hard and tough. The *débris* removed, when dry, weighed 256 grains, and was composed almost wholly of uric acid.

The next day he complained of much pain over the region of the bladder and along the urethra. He passed a good deal of blood, as well as several pieces of stone, and he perspired

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting, September 19, 1888.

freely for several days. On the fifth day the patient was well enough to undergo completion of the operation, again under the influence of ether, which he inhaled badly and recovered from with difficulty. The *débris* weighed 435 grains, and, with the former, amounted to 691 grains. Shortly after, he had a severe rigor, which lasted several hours. Three days later he complained of a violent pain in the hypogastric region. A colliquative diarrhoea set in, consisting of thin, yellow motions. His temperature was 102°; pulse 120; tongue dry; no sickness; features pinched, and great prostration ensued. These symptoms became daily more marked, and were not alleviated by any form of treatment; to them he succumbed on the eighth day, the diarrhoea persisting to the end.

An examination of the abdomen was made after death, and there was found a good deal of pus over the bladder, which was matted to the pelvic fascia. The bladder was contracted to a size just large enough to contain the stone. Its walls were extremely thick; several small fragments of stone and some turbid urine were seen in it. The mucous membrane was congested, and presented a few white patches. The rugæ were very prominent; the prostate not enlarged. The kidneys together weighed fourteen ounces; they were pale. On section, the cortex seemed to be somewhat diminished. The papillæ were enlarged and well marked, and the pelvis of the right one dilated—on the whole, they looked remarkably well and healthy. The liver weighed six pounds, and was firm on section. The spleen weighed four pounds and a half, and had contracted firm fibrous adhesions to the chest wall. The surface was mottled, and, on making a section, its structure was seen to be dense and firm. The application of tincture of iodine gave a well-marked reddish-brown reaction; it presented, indeed, a good example of amyloid degeneration.

My reason for bringing this case to your notice is, that it presents several features of considerable interest, and especially one which I may venture to say is, so far as I can learn, new to surgery.

The number of diseases the patient had in a short space of time is singular. He, first of all, suffered from an attack of acute bronchitis; after his recovery from this, acute albuminuria supervened. From this he appears to have got well, or nearly so. He was then found to have an enlargement of the spleen; this was followed by a condition of leucæmia, and the formation of a stone in his bladder.

It was a difficult matter to ascertain how long he had been the subject of splenic disease. He was known to have had the enlargement certainly for two years, inasmuch as this condition was noticed by Sir Peter Eade when the man was under his care in 1886, at which time the patient made no complaint of bladder trouble. He probably had a very small stone in that viscus, or perhaps none at all; anyhow, the calculus was of not more, or very much more, than two years' growth, and must have weighed, with the powder that was lost in the urine, together with the fragments found in the bladder, not less than twelve drachms; it consisted entirely of uric acid and urate of ammonia.

I need not say that this is an unusually rapid formation of a vesical calculus, but it is explained by a singular fact, that in cases of enlarged spleen, especially in those suffering from anæmia, there is usually a large amount of uric acid found in the urine. Senator, in "Ziemssen's Encyclopædia of Medicine," vol. xvi, observes: "There is much reason to believe that the spleen is, if not the only, yet a very

important source of uric acid, and when the spleen is enlarged, uric acid is produced in larger quantity than usual; we see this in splenic anæmia." Ranke found that in such cases uric acid was increased by one half—from 0·648 to 0·915 parts in a thousand. Pettenkofer and Voit found the average of five normal men to be 0·872, while that of a leucocythæmic patient was 1·424, an increase of 64 per cent. Ossiskoosky also found an increase, the excretion being on an average about twenty-two grains in the twenty-four hours. A similar increase was noted by Schmuziger and by Berrell. In the case of the latter, a boy aged seventeen excreted 18·28 grains daily—1·50 parts in a thousand—the average for a boy of the same size and weight, on scanty diet, being, according to Parkes, only six grains. Bartels found an enormous increase in one case, the daily excretion being 4·2 grammes, or about 60 grains.

The formation of so large a stone in so short a space of time in this case is thus reasonably accounted for, the usual rate of growth in ordinary cases, as observed and recorded by the late John Green Crosse, being about two drachms in the year.

The next point presents a circumstance of great interest and significance, especially to the operating surgeon. In *splenic leucæmia* or *anæmia* the blood is found to be deprived to a great extent of its red corpuscles, and the number of leucocytes is very much increased; in such cases there is a tendency to hæmorrhage, and the consequence is that those unfortunate persons who are afflicted with this affection are bad subjects on which to perform any kind of operation, major or minor. The low vitality of the blood and a tendency to disintegration of tissue scarcely render recovery possible. Even the operation adopted in this case does not seem to be a particularly safe one.

This singular fact, that leucæmic subjects usually succumb to fatal hæmorrhage after operations, has not been recognized by the profession, certainly not by authors on practical surgery. I have searched a large number of surgical works and periodicals, and the only allusion to the subject that I could find was by Sir Joseph Fayrer, in the "Medical Times" for 1874, in which he refers to anæmic inhabitants of malarious climates, and observes that "in such cases the slightest wounds have been followed either by gangrene or by hæmorrhage." Again he says: "Surgical operations, excepting such as are immediately necessary to save life, should be avoided in this state, the tendency to hæmorrhage, gangrene, or embolism being very great." These remarks are very valuable, though they apply more especially to the natives of India.

The unfortunate result of my case fully bears out the truth of Sir Joseph Fayrer's remarks. There was indeed a great disposition to hæmorrhage, as shown by the effusion of blood into the conjunctivæ and eyelids, as well as from the bladder. It was only as a matter of urgent necessity that the attempt was made to relieve him, and it ended fatally.

With the hope of obtaining further information on this interesting subject, I appealed to my professional brethren in the pages of the "Lancet" in May of this year. The only response was on the part of my colleague, Mr. Cadge, who kindly forwarded notes of two very instructive cases

that had fallen under his observation. Mr. Cadge says in 1861 he assisted a medical friend with a troublesome case of stone :

The man was aged fifty-four, corpulent and asthmatic. Three years previously an ineffectual attempt had been made to do lithotrity; the stone was broken, but not removed. The man continued to suffer, and had constant and great bladder irritation and cystitis.

Two large stones were removed. The operation was tedious from repeated slippings of the forceps. There was free, but not serious, hæmorrhage. No plug was used. The patient died two days after the operation. The prostate was freely divided. The bladder was contracted; the mucous membrane thickened and congested; the muscular coat thickened; the ureters, pelvis, and tubes of the kidneys were much dilated. The spleen was of an enormous size—nearly as large as the liver.

The next case, which occurred in 1866, was that of a gentleman aged sixty-four, a florid, almost purple-faced, gouty man. The stone was removed by median lithotomy. The operation was easy and quick, and no bleeding occurred at the time.

In a few hours hæmorrhage came on, apparently from the prostatic veins; it did not escape externally, but filled the bladder, and clots were frequently extruded. It ceased in twenty-four hours, and the urine then became clear, and he seemed in every way doing well for four days. On the fifth day he ate an indigestible meal; this was followed by oppression, and in a few hours by a sharp rigor and perspiration; rigors followed every day or two. He became delirious, and died a fortnight after the operation, apparently from pyæmia.

At the post-mortem examination the bladder was seen to be healthy; the mucous membrane pale; the parts about the prostate rather congested, but no pus was found anywhere. The kidneys were large and congested. There were two or three small stones in one, and some pyelitis. The liver was large and very congested; the spleen, four or five times its normal size, tinged with blood, soft, and easily lacerable.

Mr. Cadge remarks: "I have always felt uncertain as to the exact cause of death in this case. The symptoms were those of pyæmia, but the pathology was certainly not consistent with that view."

These two cases go far to establish the fact that those persons who may happen to be the subjects of enlargement of the spleen are as liable to serious risk, should any surgical operation be performed on them, as are those who suffer from splenic leukæmia, in which condition the tendency to hæmorrhage is so great as to render an operation of any kind scarcely justifiable. In corroboration of this view, Sir Joseph Fayrer, in a private communication, says: "In case of splenic enlargement I would avoid all operations not absolutely necessary to save life and relieve suffering, even although there be no leucocythæmia or apparent anæmia."

Antipyrine for Sea-sickness.—"The public attention given to the latest remedy for sea-sickness and many other affections to which flesh is heir," says the "*Lancet*," "has its percentage of evil as well as good. Every medicament is not an unmixed advantage, and to suppose that antipyrine may be taken recklessly any more than chloral is to adopt a position of a dangerous kind. Antipyrine has on several occasions been administered with unexpected results. It is a drug which has undoubtedly powerful effects on the nervous system, especially as tending to produce a lowering action. We must strongly protest against its indiscriminate employment without the supervision of a medical man."

SUMMER DIARRHŒAS OF CHILDREN.*

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THE subject of my essay to-day is one that crops up for discussion in almost every medical association throughout the land with the regularity of the season from which it derives its name, and, if my memory serves me aright, it has been the theme for debate in many previous meetings of this society. This is good evidence that the subject is an important one. Notwithstanding all that has been said and written concerning it, there yet remains a vast unexplored territory to be traversed. This, perhaps, is most evident in the domain of therapeutics. Our anxiety to increase our knowledge of this disease is quite excusable when we stop to consider how very fatal it is to the young community of this country in particular.

Statistical records tell us that no less than 75 per cent. of infantile deaths recorded in the United States during the summer season of recent years have been due to diarrhœa. These figures are certainly appalling, and a sad reflection upon us as a profession. If there be such a thing as a national disease, this is pre-eminently one. The celebrated Benjamin Rush, in the early part of this century, gave a very graphic description of this disease, and I believe it was he who christened it the "*pestis infantum Americana*"—a name suitable and appropriate even now as we approach the threshold of a new century. I do not wish it to be understood by these remarks that summer diarrhœa is unknown among children of other climes and nations. Other countries than ours have to contend with it, but, so far as my knowledge extends, it is more rampant and fatal in the United States than elsewhere. Personally, I greatly regret that I have so little to say that will materially add to our advancement in treating this disease. There have been seasons and occasions when I was sanguine enough to believe that some progress had been made, but when another year came round I found that the hopes and successes of a preceding one could not be realized, and my ideal treatment, which appeared so full of promise a year ago, had in the mean time lost its youthful vigor to such an extent that I was compelled to relinquish it for something better.

This disease appears to be so intimately connected with climatic and meteorological laws that, unless careful, one is exceedingly apt to drop into the error of attributing every good effect visible in the patient to the drugs employed, whereas, in reality, the improvement is due to some favorable change in the weather.

The foregoing remarks, you will admit, make a gloomy statement of my past experience of this disease. Lately, however, owing to a complete change in my conception of the disease, and more particularly with a certain form of it, I have modified the treatment so that it accords with my present views, and the results thus far have been very gratifying, and certainly a great improvement upon my treatment in former years. I propose to speak of summer diarrhœa under three heads or divisions—viz.: I. The mechani-

* Read before the Luzerne County Medical Society, at Glen Summit, Pa., August 8, 1888.

cal or simple irritative. II. The toxic. III. The inflammatory—the last being subdivided into the acute and the chronic. This classification, I acknowledge, is somewhat arbitrary, but, indeed, how can it be otherwise when our knowledge of the subject is so imperfect and inaccurate? It is not to be supposed that each separate division always bears the impress of sharply defined signs and symptoms which the veriest tyro in medicine can readily distinguish and recognize. This is frequently an impossibility, even to the most scrutinizing clinician. Oftentimes it will be found that a diarrhœa of one kind is very apt to change its type and run hurriedly into another form of the disease, and that that which a short time previously appeared to be nothing more than a simple bowel disorder may, under certain unfavorable conditions, assume a very aggravated aspect, and eventually terminate in the inflammatory variety, accompanied by all the evils which usually attend ulceration of the bowels.

I. *Mechanical Diarrhœa*.—I shall now invite your attention to a brief description of the mechanical or simple irritative diarrhœa. By this form I mean a diarrhœa which is caused by the presence of a substance (usually belonging to the vegetable kingdom) in the alimentary canal, whose action is simply that of a foreign body—a body over which digestion has no influence. In this variety of the disease the diarrhœa is to be regarded as a physiological effort of nature to rid itself of a substance which has, so to speak, no business there. A diarrhœa of this description is not essentially a summer affection, but, as the substances which usually give origin to it are more abundant at that season than any other, and many of them not to be found except at that period, I feel justified in placing it for consideration under the title of this paper. Respecting its symptomatology, I may state that pain in the abdomen is the earliest symptom to manifest itself. Vomiting, as a rule, does not often occur unless the irritant remains in the stomach, and when this happens free emesis usually results in its expulsion, and there is no further trouble. Generally, however, the irritant is allowed to pass into the bowels, and its presence there very soon sets up a violent diarrhœa. This diarrhœa is always accompanied by severe tormina, and, if the foreign substance is not voided after the alimentary canal has been almost emptied of its contents by the severe purging, tenesmus is added to the patient's misery. The diarrhœa does not make its appearance until three or four hours after eating have elapsed—not until bowel digestion commences. The character of the stools is at first the natural contents of the bowels, but if the irritant has not escaped, it eventually assumes a muco-sanguineous nature, with probably a more or less admixture of pure bile—in fact, the discharges soon become characteristic of the inflammatory form of diarrhœa.

The bowels, when not irritated to a pathological degree by the foreign substance, assume their natural quietude with the expulsion of the offending material. This happy termination, unfortunately, is not always to be counted on, and the disease passes on to the inflammatory kind. The irritant, by nature of its irregular and oftentimes rough exterior, lying in close contact to the intestinal tube, may, during the excitement of peristalsis, injure its delicate mucous

membrane to such a degree as to cause the injured surface to inflame. Here, then, is an example of twofold importance. In the first instance we see how a simple diarrhœa may degenerate under unfavorable influences into a severe form of the disease; and, secondly, an opportunity is given us to observe that it is possible for the means adopted by nature as a cure to become, through intensity of action, a source of further mischief.

Treatment.—A diarrhœa of this nature is best treated by those remedies which control peristalsis. Opium and belladonna, administered in alkaloidal form, separately or in combination, are the most suitable drugs to employ. The dose must, of course, be carefully regulated according to the age of the patient.

If it be for a young child, it is probably safer to give the crude drugs in powder or tincture form. Great caution should be exercised in prescribing cathartics for this form of diarrhœa. I acknowledge that the temptation to give a cathartic to get rid of the irritating material is great. At first sight this seems a very rational treatment, but I am convinced it is one very apt to be followed by disastrous results. If, however, the diarrhœa has been moderate, there may be occasions when a mild laxative may do good. Under these circumstances it would be advisable to combine it with an opiate. I should for such cases give preference to that very elegant preparation of the United States Pharmacopœia—the aromatic syrup of rhubarb—or to a dose of emulsified castor-oil, adding to either remedy a few drops of laudanum.

II. *The Toxic Diarrhœa*.—This form may be said to be the antithesis of the one we have just described. It is, I believe, the true summer complaint or cholera infantum. You will remember that I spoke of the other form as being due to the presence of a simple irritant in the bowels, and that generally pertaining to the vegetable kingdom. The kind under discussion at present is never, I think, caused by vegetable ingesta, but arises from the presence of an animal poison or poisons closely allied to, if not identical with, the ptomaines. Oftentimes these poisons are introduced from without through the medium of the food administered—*e. g.*, with milk, gelatin, cheese, eggs, fish, and butcher's meat. They are, however, in most instances formed within the body, and are probably the products of animal decomposition resulting from a pernicious digestion. Undoubtedly a high temperature plays a very important part in their development, acting, as it does, through the nervous system upon the digestive secretions. The influence which heat has upon cerebral tissue is apparent to us all, adults as well as children. Upon the latter, however, whose nervous system is yet in its infancy, it comes with a crushing force. It is difficult to tell what these changes are which undoubtedly do occur. Certainly it is no gross lesion. Very probably it is some form of molecular disturbance in the cerebral cells, which tends to break up their harmonious action. To be practical, we shall call it a form of enervation, and, as a result arising therefrom, the quality as well as the quantity of the digestive ferments is changed. The ferments, having been robbed of their healthy vigor, can perform only a partial digestion. The bile, too, probably loses its anti-

septic properties, so that decomposition of the nitrogenous matter is allowed full play, and, as a result, animal alkaloids are generated, which, becoming absorbed into the general system, manifest their presence by a peculiar train of symptoms so well known to us all. Vomiting is a prominent accompaniment of this variety of summer diarrhœa; indeed, it is frequently a very annoying precursor of it. It is not unusual for this distressing symptom to cease entirely toward the last stages of the sickness, and the inexperienced and unobserving are apt to regard this change as of favorable import, but the watchful physician knows full well that, if there are no accompanying improvements manifested in the other symptoms of the disease, cessation of vomiting indicates a complete paresis of that center which governs this action of the stomach, and that dissolution is not far off. Diarrhœa plays the leading rôle in this disease. It is not always an early symptom. Sometimes it is tardy in making an appearance. Usually, however, it soon assumes an alarming character, and the life of the patient will depend upon its behavior. It is a relentless and an unmanageable symptom. Sometimes it is more moderate than others, and during these remissions the patient may gather enough strength to make a successful combat with it, should it be inclined to make a fresh onslaught. As a rule, however, the victim is so severely dealt with at the beginning that, if a moderation of the diarrhœa does occur, the patient has no strength to withstand it, even in a mild form. In typical cases of this disease the discharges from the bowels are at first fecal and bilious, but, as the choleraic type develops, they soon become watery and inodorous. They are never bloody. Children who are brought up on the bottle are more prone to take this disease than those who are naturally fed, but it is by no means confined to the former. Filth, impure air, bad drainage, and unsuitable food favor its development, but paramount among causes must be regarded a high atmospheric temperature. This fact is well exemplified when we recall to mind that this disease is not essentially a disease of cities and tenement-houses. It is known to make its appearance in the most salubrious of places, along the sea-coast and on the mountain heights, and in places where we have every reason to believe in the purity of the atmosphere.

The nervous system soon shows evidence of great irritation and exhaustion, and a spurious form of hydrocephalus, the result of an anæmic brain, very frequently appears, and which I have on more than one occasion seen mistaken for an active inflammation, and treated accordingly. Convulsions frequently close the scene. Before leaving the symptomatology of cholera infantum, let me say that very often there may be seen what I shall term a prediarrhœal stage. This stage may last for several days, or even for a few weeks; but, if recognized sufficiently early and treated judiciously, it may be thwarted in its progress, and the disease prevented. The leading features of this stage are advancing pallor of the face, vomiting, and emaciation. Associated with these are certain nervous disturbances, such as restlessness, fretfulness, and sleeplessness—the results of an irritated brain. The post-mortem signs are vague and indefinite. Oftentimes nothing can be learned from an in-

spection of the bowels; generally, however, there is a more or less pallor of the mucous membrane, and sometimes a few inflamed glands may be seen. The mucous membrane of the stomach is frequently congested; the brain is anæmic, and the liver has a shrunken appearance. The gall-bladder may or may not contain bile.

The treatment of this disease has always been a *vexata questio* with physicians. Respecting the benefits derived from hygienic measures we are all of one opinion, but the medicinal and dietetic part of the treatment is as varied as it is unsatisfactory. The one which appears the most rational to me, and which I have most confidence in, I shall now very briefly portray. In the first instance, let the patient be removed to a cool, airy room; one with a northern aspect is to be preferred. There is no objection, when practicable, to an out-door position, especially if it be a shady and breezy place. All superfluous bed-clothing should be removed. Parents and nurses frequently insist that the patient, in order to get well, should be wrapped and re-wrapped in several layers of woolen covering, and this when the temperature outside is a tropical one. I am convinced that this practice, which I know to be common, is productive of much evil. If there is anything suspicious in the quality of the food, I order it stopped, and if there are indications that the stomach is extremely irritable, it is best to cease giving for a time anything that is ordinarily known as "food." The child, however, may be allowed to partake of small quantities of lime-water, barley-water, or ice-water, with a little good brandy or whisky added to it.

A teaspoonful of iced champagne, administered frequently, is one of the best of stomach soothers with which I am acquainted; and I can recall to mind many pleasurable instances where I have seen the dulled eye become bright again, and the flickering pulse at the wrist revive, as each dose of the wine was being retained and absorbed.

When speaking of the ætiology of this form of diarrhœa I stated that I was inclined to believe that it originated from a pernicious form of digestion, and that the immediate cause of it was the presence of certain poisons which had probably been generated during the decomposition of the animal albuminoids contained in the food administered, and which had undergone not only a partial but also a peculiar digestion. This theory, from a clinical standpoint, has everything to recommend it, and, to a certain extent, it has been sustained by chemical analysis. It can not be doubted that animal matter, when in a state of decomposition, is not the comparatively inert substance that a vegetable compound is under similar circumstances. If the above theory of its origin be correct, it is evident that animal food in the form of milk, eggs, cheese, butcher's meat, etc., is a very unsuitable diet for a patient suffering from this disease, and I think this has been abundantly verified, when a change for one containing vegetable albuminoids has been made, by the marked improvement manifested in the patient and his symptoms. I do not, however, wish to convey the impression that we have a purely vegetable food that is equivalent in nourishment to those just mentioned; but I do maintain that, when necessary, the vegetable albuminoids will answer the purpose fairly well for a short time, and especially if

supplemented by alcoholic stimulants freely diluted with simple water, or with water that has been impregnated with lime or with the salts of certain cereals. The gluten of wheat, for instance, is a vegetable fibrin, and albumin and casein are known to occur in the juices of seeds and plants. It has become somewhat fashionable of late to administer in this and other diseases predigested foods into the stomach when that organ is deficient in digestive power; and there are some persons who claim that this is rational practice, but to my thinking it is one opposed to every law of nature. I am a firm believer in Nature's dominancy under whatever condition she is placed, and when she can not perform what we call a healthy action she will, in preference to performing no work at all, adopt a method of labor peculiar to and in accordance with the forces that prompt her into activity, and any material which is not the result of her own labor will be disdainfully rejected for use in the structure undergoing erection. She must be the sole contributor, and other work than her own will not suit. To express this in clearer and briefer words, I will say that predigested food is useless to the economy, so far as its predigestibility is concerned. I suppose that the nearest approach to an artificial food suitable for children suffering from this complaint is that preparation recently brought out by an eminent New York firm of druggists. It has, however, two disadvantages, one being that it contains a certain amount of animal albuminoids in the form of desiccated milk; the other, that it happens to be the most recent preparation of its kind in the market; but this time will erase. Great caution and discretion must be exercised when a return to the ordinary diet of the patient is contemplated. There is great danger in doing this too soon. The nervous system must first be fortified by improving the digestion, and we should not attempt making the change until we have good reasons for believing that every vestige of decomposed matter, formed by the unhealthy digestive ferments, has been removed. There is no positive means of discerning this, and we must, therefore, take the general symptoms and appearance of the patient as guides and criteria.

I shall now proceed to the more congenial part of the treatment—viz., the medicinal—and, at the risk of being considered pedantic, I shall mention, in the order of their merit, those prescriptions which I have found the most efficacious, assuming that the patient is about a year old.

℞ Pepsinæ puræ..... gr. viij-xij;
 Acidi hydrochlorici dil..... ℥lxxij;
 Tinct. opii deodor..... ℥x;
 Syrupi..... 3 iv;
 Aquæ..... ad 3 iij.

M. Sig.: A teaspoonful every or every other hour.

℞ Hydrarg. subchlor..... gr. $\frac{1}{4}$;

℞ Hydrarg. c. cretæ..... gr. $\frac{1}{2}$;

M. Sig.: Either of the above to be given dry upon the tongue every two hours.

℞ Acidi nitrici dil..... 3 j;
 Acidi carbolici puræ..... gr. iv;
 Tinct. opii deodor..... ℥x;
 Aquæ..... ad 3 iij.

M. Sig.: One drachm every two hours in water.

℞ Bismuthi subnit..... gr. xlvijj;

Sp. ammon. co..... 3 ij;

Tinct. opii deodor..... ℥x;

Misturæ cretæ..... ad 3 iij.

M. Sig.: One drachm every two hours.

You will observe that I have given the place of honor to those remedies which aid digestion, and I can safely say that I have seen better results from their use than from any other treatment that I have tried. So far, their action appears to uphold the theory I entertain in regard to cholera infantum.

A reliable preparation of pepsin is a great desideratum. I never prescribe the saccharated form, as I do not think it trustworthy, and it is to be hoped that it is a drug of the past.

III. *Inflammatory Diarrhœa*.—This variety of diarrhœa usually makes its appearance late in summer or during the autumn months. Dampness and moisture favor its development, and it is therefore more prevalent during a rainy season and when the disparity between diurnal and nocturnal temperatures is greatest. Miasmatic influences, by originating congestion of the portal system, also play an important part in its causation. A diarrhœa of this nature is very liable to assume a dysenteric character, and, indeed, it frequently becomes a difficult question to decide which disease is present. Dysentery, however, can generally be recognized by that peculiar odor which usually attends the stools, and which is so characteristic of that disease. This is generally absent in the disease under consideration. The stools in inflammatory diarrhœa are extremely liable to vary in character; one day they may be serous or muco-purulent, while on the next they may be of a fibrinous or a bloody nature. There is usually more or less constitutional disturbance present, but the fever is never very high. Vomiting is not a frequent symptom: indeed, it is often conspicuous by its absence. The abdomen feels hotter than any other part of the body. It is tender to pressure, and has a tense feel. This disease, if not cured within a week, has a great tendency to become chronic, and it may then last for several weeks or months. It is frequently fatal in its acute form, and death is generally the result of asthenia, brought on by the frequent discharges and from the severe pain which attends the tenesmus. When tenesmus is marked the stools are either entirely composed of mucus or of blood. When the disease passes into the chronic form the diarrhœa is very capricious. It may cease entirely for a day or two and appear again as vigorous as ever. It is rare, however, for two consecutive evacuations to be alike. The tongue becomes very characteristic. It is perfectly clean, red in color, and looks as if it had been glazed. Sometimes it is studded with aphthous ulcers. The patient is usually very thirsty, but this symptom is not so much due to the intensity of the fever as it is to the drying up of the tissues, brought on by the continual drainage from the bowels. Evidence of anæmia soon shows itself, and the patient becomes greatly emaciated. Death generally occurs from exhaustion. The anatomical lesions are of an inflammatory character. The mucous membrane, glands, and follicles of the large intestines, notably the colon, are

the parts usually attacked. The small intestines generally escape, but sometimes the ileum bears traces of the disease. The mesenteric glands appear red and swollen, and when the disease has existed for some time evidence of ulceration is present. In strumous children, and in those who are predisposed to phthisis, the degenerative form of glandular disease is apt to be developed.

Treatment.—Children who are liable to be attacked by this disease should always be warmly clad. A woolen roller placed over the abdomen is a good safeguard. The feet, also, should be kept warm and dry. Mercurials are often of great service in this kind of diarrhœa, especially in its acute form. It is a good plan to administer a dose of castor-oil to get rid of scybala, which may be present, before commencing the mercurial treatment. When there is reason to suspect a malarial taint a mixture composed of small doses of sulphate of magnesia, quinine, and sulphuric acid oftentimes gives happy results, and it is said that counter-irritants applied over the hepatic region are very beneficial. In the chronic form mineral and vegetable astringents may be used with advantage. Iron is specially indicated when the patient is anæmic. The most serviceable ferruginous preparations, in my experience, have been the liquor ferri perchlor. and the liquor ferri pernit.

Before concluding this paper I must say a few words in reference to the bacterial theory of summer diarrhœa, and I suppose some of you wonder why I have tarried so long without doing so. The theory of bacterial origin is one that has many stanch and learned adherents, and it is probably getting to be the most generally-accepted theory. We are told that bacteria are always present in matter which is undergoing putrefactive decomposition, and that they are known to always exist in the intestinal canal; but are we safe in ascribing the various forms of putrefactive decomposition to the *presence* of these micro-organisms? I do not feel competent to answer this question in the negative, neither am I, on the other hand, inclined to accept this theory in its entirety. I think it is extremely doubtful if bacteria are actually concerned in the processes connected with putrefactive decomposition. That they are present whenever these changes occur can not be denied, but may they not be drawn hither instinctively (if you will allow the term)? and are not such places their native abodes? We have seen that they are always present in the alimentary canal, whether their host be healthy or diseased, and bacteriologists have yet to tell us how we are to distinguish the natural *habitués* of the bowels from their relatives which are said to visit these parts on special occasions only. I think it is the matter which surrounds these organisms, and in which they delight wallowing, that contains the poison, and that this poison is of a chemical nature. You will also probably have noticed that I have said nothing concerning the treatment of diarrhœa by medicated injections into the bowels. I have tried this method to some extent, but have never been satisfied with its utility. The bowels, as a rule, resent them, and their use interferes with the treatment of rest to a diseased part. And, lastly, the influence which dentition is said to have in causing diarrhœa is another subject which has not been dealt with. I have omitted it advisedly, as I have never

been able to clearly see that it plays any part in the causation of summer diarrhœa. That diarrhœa frequently exists as a complication of dentition can not be denied, but to raise the latter to the dignity of a cause is more than my experience can allow.

THE INCREASE OF INSANITY AND MENTAL DEFECTIVENESS.

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THE frequency with which the inquiry is made of physicians as to the cause of the great increase of insanity suggests some thoughts on that subject. That insanity in the United States is increasing in a ratio greater than the relative increase of the native white population is, I think, questionable; yet the belief that it is is generally accepted, and explanations have been sought in the changed habits of our people, resulting from the quickened movements of late years in all the departments of human pursuits, and from the development and discovery of new subjects of thought and of excitement.

To admit this as a fact would be to allow the conclusion that education and civilization are promoters rather than preventives of mental defectiveness, and that our race is consequently deteriorating. This would be at variance with well-established physiological laws, and with the accepted aphorism, *mens sana in corpore sano*, toward which all psychological study is tending.

The brain and nervous system are as dependent on proper nutrition, training, and exercise for healthy development as are the muscles and other organs of the body. That our systems of education, training, and pursuits are not materially defective, or at least that progress is being made in that line, is demonstrated by the fact that the average duration of human life is regularly increasing, and that no period of the past has presented so many evidences of mental and physical vigor of the race as have the preceding and present generations.

The very much larger percentage of the insane among our foreign population and the obvious increase of insanity among the negroes of the South accounts, I think, for a large percentage of the real increase in the ratio of the insane over the sane population. But, after all, this great increase of insanity over which the public mind is so greatly exercised is more apparent than real. It was only by the late census that all of the mentally defective population in the United States became statistical. No statistics previous to the last census were sufficiently accurate to be of any value in arriving at conclusions.

Most of the States now, not only from a humane sense of duty, but from policy also, are attempting to provide for all of this class of their diseased and defective population. This is done in a way that brings them prominently before the public. The great improvement in the construction of hospitals and asylums for the insane, and the methods of treatment and care of them, has done so much toward subduing prejudice against these institutions that every

class of society now seeks admission for their afflicted, thus appearing to add largely to the number of the insane and mentally defective who are only brought into account by institutional care.

It may be admitted that there is more discovered and even more real insanity among civilized than among uncivilized people, and yet civilization, except so far as alcohol is chargeable to its account, is not responsible for its origin; unless that responsibility is incurred by a humane and Christian conservation of the weak and defective, that character of population and offspring that is eliminated from barbarous populations by the inexorable law of "the survival of the fittest." It is a mistake to conclude that there is but little mental or cerebral defectiveness among uncivilized peoples. The same is said with reference to bodily defects and disease, which is true only because such are destroyed or are allowed to die from neglect and want of care. A great deal of insanity is eliminated by races who have made progress in civilization and enlightenment by persecution and neglect of its unfortunate victims. It has not been long since witches were burned at the stake in our own country, and since then none were considered to be insane unless they were raving maniacs or jabbering idiots. The impulsive, the delusional, and reasoning maniacs were deemed "to be moved and instigated by the devil," and were strangled or burned at the stake.

Much of this barbarous sentiment survives to the present day, and is exhibited in the clamor for the blood of the victim who, under an irresistible impulse or a fixed delusion, commits a homicide or other act that in a sane person would be a crime. Examples are not wanting in which this sentiment has influenced the verdict of juries both in this country and in Europe.

Another important factor in the apparent increase of insanity is the facility with which it is now detected, and the diminished opportunities and motives for concealment on the part of the friends of the patient. With these facts before us we are only bound to admit that we know of a larger percentage of insanity than was known fifty, or even twenty-five, years ago. Whether, however, this constitutes a larger percentage than the methods now pursued would have revealed at any other period of our history, we have not the means to determine.

The popular and generally received idea that insanity is one of the penalties of civilization and higher intelligence at least admits of doubt. The cases of insanity resulting from emotional and intellectual strain are more than compensated for by the other extreme—ignorance, poverty, and depravity—prolific causes of insanity that are eliminated by the higher degree of civilization and enlightenment.

The subject on which the delusions of insane persons rest is often noted as the cause of their insanity. Persons are said to be insane on the subject of religion, on the subject of mechanical inventions, on electricity, steam, dynamite, etc., thus extending the causes of insanity *pari passu* with the developments of science and the inventions of civilization. The mind can not grasp in its insane delusions subjects of which in its normal condition it has no knowl-

edge. The character of the delusion is determined by the mental culture of the individual rather than by the subject on which the disordered mind may rest. The subject has not rendered the man insane, but has become the subject of his delusion because he is insane.

That there is a very much larger and increasing percentage of insanity among our foreign than is found in our native population is a fact that is fully recognized. This results more from the circumstances attending these than from any racial predisposition. The change of habits and of relation to society, homesickness, anxiety about a living, and worry about making money, and in many instances defective nutrition, all operate as exciting causes of insanity. Intemperate habits, often engendered from these causes, is also an important factor in the causation of insanity.

The insane neurosis or predisposition of the individual whose restlessness and discontentment possibly determined his immigration to this country brings a larger than a proportionate number of that class who, with their offspring, go to swell the numbers of insane among the foreign population of the country.

The same cause operates to increase the percentage of insanity in large cities and in dense populations. The individual who is tyrannized by an insane organization, whether hereditary or acquired, who is unstable in his habits, is restless, discontented, and perhaps intemperate, is more liable on this account to drift to a city; others, impelled by delusions of their own importance and of extravagant purposes, find their way to a city in order to carry out plans of reform, to complete inventions, or to establish great enterprises. That more insanity results from causes operative in cities than in thinly settled rural populations, such as we have in Kentucky, I think is questionable.

It is usually assumed that there is more poverty, crime, and intemperance in cities than in the country. If this be true, it is fully counterbalanced by the feeling of solitude and of anxiety inseparable from an isolated mode of life and the absence of that sense of safety that comes from well-protected and closely organized society. The insane age—from twenty to thirty-five years—is represented in our asylums by a large number of married women and men who have begun life without means, and perhaps on a rented farm or on one purchased with deferred payments. The struggle for a living and the anxiety for the future at once become intense; the drafts of maternity and the presence and responsibility of children are soon added; disappointment or defeat too often follow these exhausting efforts, or, even if moderately successful, the strain has been too great, and an organization that might have borne the individual through more favorable circumstances succumbs to acute melancholia or mania.

In the condition of servitude there was very little of insanity known or observed in the negro race. There was considered to be more of idiocy and imbecility in proportion to the insane than was found in the white race; yet, owing to the lower intelligence of the negro and the *régime* and discipline of the slave code in which the care of the negro in every condition devolved on his owner, these were not as obvious as were similar defects in the white race.

The case now is widely different. Generally poor and naturally improvident, the negro family having a defective member at once seeks the aid of the State for the afflicted one. In this way all are gathered together in the asylums, poor-houses, or county jails, or are cared for in the family at the expense of the State. Being thus paraded before the public, a marked impression is made on the minds of those who remember the negroes before their emancipation, and can rarely bring to mind a single case of insanity among them.

After making due allowance, however, for these facts, it is still recognized that insanity is increasing among the colored people at a rate that, if continued, will soon equal and exceed the percentage in the white population. This is owing to causes that are readily appreciated. The negro is essentially an emotional and superstitious character; liberty is accepted by him in a large measure as a license to cultivate his emotions and superstitions, and to indulge his appetites without the restraint imposed by a corresponding mental culture. His religious excesses are as unrestrained as are his physical and moral debaucheries. Intemperance in all the habits of the race is doing much to induce insanity and mental defectiveness.

The sudden transition from a condition of servitude, with its enforced habits of temperance, prudence, and industry, to one of freedom and self-dependence, brought with it privileges and responsibilities for which the race was unprepared either physically or mentally.

Large numbers of the colored people have made an honest effort to meet the obligations that their changed relation to society has imposed upon them, and have thereby subjected the brain and nervous system to strains up to which they had not been developed by previous education and training. Poverty, with its consequent defective nutrition and mental worry about a living for themselves and families, is doing much toward ingrafting the insane neurosis upon the negro race.

The fact that general paresis is becoming common in the negro indicates that his race enjoys no immunity from the influences operating to induce insanity in the white man, and that until time shall accommodate his organization to the requirements of his new surroundings, the negro may be more subject to mental defectiveness than the white race.

Urticaria Pigmentosa.—"In an elaborate monograph on this disease, containing an exhaustive analysis of previously recorded and several new cases, and some interesting chromo-lithographs," says the "Lancet," "Dr. Paul Raymond discusses a disease of much interest, first studied in England. This affection of early infancy is characterized by urticarial eruptions succeeded by raised or flat patches of a brown color. It has a variable duration, averaging about ten years, and the author thinks it allied to urticaria, but differing very distinctly clinically and in its pathological anatomy. He concludes that it is a special angio-neurosis, marked by a vaso-motor hyperexcitability, and an independent dystrophy or tropho-neurosis of the dermis, ending in the formation of the peculiar cells described as 'mastzellen.' The peculiar and characteristic coloring of the eruption, which is so interesting a feature, is thought to be due to the accumulation of 'mastzellen' and superadded elements, and secondarily to hæmatin crystals and pigmentation of the lowest cells of the epidermis."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 29, 1888.

HABITUAL CONSTIPATION IN CHILDREN.

DR. EUSTACE SMITH ("Brit. Med. Jour.," July 7, 1888) enumerates the causes of habitual constipation in children as follows:

First. Improper feeding. An excess of starch or of any article which overtaxes the digestive power may burden the alimentary canal with a large undigested residue and thus set up a costive habit.

By such means a mild catarrh of the intestinal mucous membrane is excited and maintained. There is an excess of mucus, and the fæcal masses, rendered slimy by the secretion, afford no sufficient resistance to the muscular contractions of the bowel, so that this slips ineffectually over their surface.

Second. Dryness of the stools. Even in the youngest infants the evacuations may sometimes be seen to consist of small, hard, round balls, like sheep's dung. This form of costiveness is generally due to insufficiency of fluid taken. The food is made too thick, or the needs of the system in the matter of water are overlooked. But, whether the constipation be due originally to excess of mucus or deficiency of fluid, it can not continue long without affecting injuriously the peristaltic movement of the bowels. As the colon grows accustomed to be overloaded, the intestinal contents can no longer exert a sufficiently stimulating influence upon the lining membrane, and the muscular contractions begin to flag. If the infant be badly nourished, this languor of muscular contraction may be aggravated by actual weakness of the muscular walls; and as, under these conditions, the bowel is apt to be overdistended by accumulation of its fæcal contents, the expulsive force at the disposal of the patient is seriously impaired. Constipation due to the above-mentioned causes is often made more serious by the infant's own efforts to delay relief. A baby whose motions are habitually costive knows well the suffering which undue distension of the sphincter will entail, and often yields to the desire to go to stool only when it is no longer possible to resist. The pain is sometimes aggravated by the formation of little fissures, and the violent action of the sphincter, set up by their presence, forms an additional impediment to free evacuation.

Third. The use of opium, generally given secretly by a nurse for her own purposes. So long as the sedative is given, the bowels are costive, the child often vomits, his relish for food in great part disappears, and he lies, with pupils firmly contracted, in a dull, heavy state, from which he can not easily be roused.

An infant whose bowels are habitually costive is not necessarily injured by the want of daily relief. Often the child

seems perfectly well, and, except for occasional local discomfort when he gets rid of an unusually large or hard mass, may appear to suffer no inconvenience at all. In other cases there is flatulent distension or frequent colicky pain, the child sleeps badly, has a furred tongue, and cares little for his food; the motions are often light-colored from undigested curd, and are passed with violent straining efforts, during which the bowel may prolapse or the navel start. This straining is not an uncommon cause of hernia. In relieving this condition, attention to the feeding and clothing of the baby are of little less moment than the use of drugs. When the infant is at the breast a teaspoonful of syrup given three or four times a day before a meal will often quickly restore the normal regularity of the bowels. If the stools are habitually dry and hard, the child should take a sufficiency of liquid with his food. In addition, it is useful now and then to make him drink some plain filtered water. In the case of a baby in arms, the possibility that the child may be thirsty and not hungry seems rarely to be entertained; but in warm weather, when the skin is acting freely, the suffering among young babies from want of water must often be acute. At such times the urine is apt to be scanty and high-colored, and may deposit a streak of uric acid on the diaper. When fluid is supplied, the secretion both from the bowels and kidneys quickly becomes more healthy; and a deserts- spoonful of some natural aperient water, given at night, aids the return of the stools to their natural consistence.

The form of constipation due to mild intestinal catarrh is common enough in young infants. This is owing, no doubt, in great measure to overabundant feeding with starchy matters, or to the giving of cow's milk without taking due precautions to insure a fine division of the curd. Still, it can not be denied that we sometimes find the same derangement in infants whose diet is regulated with proper judgment. In them the intestinal catarrh is often the result of exposure, for the sudden withdrawal of all protection from the legs and belly which the process known as "short-coating" too commonly involves is a fruitful cause of chill. Under such conditions the bowels are, no doubt, often kept in a state of continued catarrh from rapidly recurring impressions of cold. When constipation is due to this cause our first care must be to protect the child's sensitive body so as to put a stop to the series of catarrhs. To do this it will not be sufficient to swathe the belly in flannel. The legs and thighs must also be covered, for so long as a square inch of surface is left bare the protection of the child is incomplete. The infant's diet must next be regulated with due regard to its powers of digestion. Excess of starch must be corrected, and it is best to have recourse to one of the malted foods. Mellin's food is especially valuable in cases where there is this tendency to constipation, as in many children the food has a very laxative effect; but, as Mellin's food contains no unconverted starch and can do nothing to prevent the formation of a dense clot when the curd coagulates in the child's stomach, it is advisable, when giving it with milk, to insure a fine division of the curd by the addition of some thickening material, such as barley-water. A certain variety in the diet is of importance in all

cases where the digestive power is temporarily impaired. Therefore it is advisable to order an additional food to be given alternately with the Mellin and milk. Benger's "self-digesting food" is useful for this purpose, and rarely disagrees. It must be given, like the Mellin, with cow's milk, but without the barley-water, for the pancreatin it contains has a digestive action on the curd and removes the tendency of the latter to firm coagulation. In addition to the above, if the child has reached the age of ten months, he may take a meal of veal-broth or beef-tea once a day, and with this it is advisable to give some vegetable, such as broccoli or asparagus, thoroughly well boiled. At this age, too, the milk of the morning meal may be thickened with a teaspoonful of fine oatmeal and sweetened with a teaspoonful of malt extract. In the case of many infants suffering from habitual constipation, the appetite is very poor, and great difficulty is found in persuading them to take a sufficient quantity of nourishment. This indifference to food is almost invariably associated with coldness of the extremities, and usually disappears when measures are taken to supply necessary warmth to the feet and legs.

In addition to the regulation of diet and clothing, the bowels should be regularly stimulated by manipulation. The sluggishness of peristaltic action may be very materially quickened by judiciously applied frictions. The nurse should be directed to rub the child's belly every morning after the bath. She should use the palm of the hand and ball of the thumb, and, pressing gently down upon the right side of the abdomen, carry the hand slowly round in a circular direction, following the course of the colon. The frictions may be continued for five minutes. In obstinate cases the child may be placed upon the bed, and the bowels gently kneaded with the thumbs placed side by side, the movements following the course of the colon.

In addition to the above-mentioned general treatment, more especial measures may be necessary. These may be divided into suppositories and enemata, and medicines given by the mouth. The time-honored piece of Castile soap for a suppository is recommended, and the now popular enema of thirty or forty drops of pure glycerin. Large enemata of soap and water should be used only rarely, as great dilatation of the rectum and permanent loss of muscular tone are very apt to follow their continued use.

For the permanent cure of habitual constipation, remedies given by the mouth are greatly to be preferred, but strong purgatives are worse than useless. The aim should be to find the smallest dose which will awaken a normal degree of peristalsis, and to give this dose regularly so as to excite a habit of daily evacuation. The daily dose is most efficient when combined with a remedy which tends to give tone to the muscular coat of the bowel. For this purpose a useful draught is composed of half a drop of tincture of nux vomica, combined with ten drops of tincture of belladonna and twenty of infusion of senna, made up to a fluidrachm with infusion of calumba. This should be given at first three times a day before food, and subsequently reduced to twice, and then to once daily. The liquid extract of cascara is useful in many cases, especially

when combined with tincture of belladonna. Twenty, thirty, or more drops of cascara extract, with ten of tincture of belladonna, may be given with a few drops of glycerin every night. In the west of England a favorite remedy is half a grain of sulphur, colored red with cochineal, and, when given regularly every night, it is often efficacious.

When the motions are drier than normal, a saline may be given in addition to the liquid already recommended to be added to the diet. The saline may be combined with small doses of nux vomica and quinine. For a baby of five or six months, five to ten grains of sulphate of sodium may be given, with a quarter of a grain of quinine, half a drop of tincture of nux vomica, and a minim of aromatic sulphuric acid, in a teaspoonful of water, three times a day before food. If the remedy has been well chosen, its quantity may soon be diminished, and finally it may be discontinued.

MINOR PARAGRAPHS.

MICRO-ORGANISMS IN THE GENITAL TRACT OF THE HEALTHY WOMAN.

WINTER ("Ctrbl. für Gynäkologie," No. 17, 1888) has examined all parts of the genital canal during life for micro-organisms, and believes he has the material to answer the two following questions:

1. What parts of the genital canal contain organisms?
2. Are any pathogenetic organisms found in the genital canal of a healthy woman?

The results of his inquiries are as follows: The normal tubes contain no micro-organisms. The uterine cavity generally contains no bacteria; but they may easily be carried there, as, for instance, by the uterine sound. The cervix and vagina always contain abundant organisms. In the search for pathogenetic organisms Winter found one which he is inclined to believe the *Staphylococcus pyogenes albus*, and this was certainly found in half of all the cases in the parts affected by bacteria. He also found the *Staphylococcus pyogenes aureus* four times, the *Staphylococcus pyogenes citreus* once; streptococci were found three times. The grounds on which Winter bases his belief in the presence of true staphylococci are their absolute conformity to the culture characteristics; and with the *Staphylococcus pyogenes aureus* and *citreus* the characteristic pigmentation. To prove the identity and virulence of the organisms, Winter made many attempts to inoculate animals, but all without result. Nevertheless, he believes in their identity. The practical result of his researches is to prove that in operations on the lower parts of the genital tract thorough disinfection should be resorted to, to prevent possible self-infection of the wound.

ACTINOMYCOSIS IN MAN.

M. NOCARD reported the first case of this disease which has been observed in the human subject in France to the Académie de Médecine. The patient was a stable-boy in whom, after certain injuries to the left buttock and thigh in the spring of 1887, what seemed to be a deep-seated chronic abscess developed in the limb. This was opened in July, and other abscesses appeared in October and November. The pus contained a considerable number of small white bodies, which, on microscopic examination, were found to be masses of actinomyces. In July, 1888, there was still an obstinate fistula which from time to time

became inflamed and discharged pus presenting the characteristics already described. The patient is now able to walk, and his general health is better than it was, but he is not cured.—*Brit. Med. Jour.*

THE CONDITION OF THE BRAIN IN CASES OF CONCUSSION.

MR. BRYANT, in his lectures on cranial and intracranial injuries ("Lancet," Sept. 1, 1888), devotes considerable time to the changes found in the brain after so-called concussion of its substance, or rather shaking of its structure. In his experience, concussion has always been synonymous in a pathological sense with contusion or laceration of the brain. Sir Prescott Hewett, thirty years ago, said: "In every case in which I have seen death occur shortly after and in consequence of an injury to the head, I have invariably found ample evidence of the damage done to the cranial contents." Mr. Hilton, who followed him, wrote: "We ought to consider a brain which has been subjected to concussion a bruised brain." And Mr. Le Gros Clark, who lectured later, stated: "I have never made or witnessed a post mortem after speedy death from a blow on the head where there was not palpable physical lesion of the brain." Neudorfer, of the Austrian army, declares that he has never seen concussion, as so called, since in all cases he has examined cerebral injury was found to exist.

After citing numerous cases of physical changes in the brain substance as a result of so-called concussion, Mr. Bryant says: "With these facts and conclusions before us, am I therefore wrong in assuming with some confidence that you will see with me the expediency of combining with the term 'concussion' that of 'injury,' and of describing such cases in the future as those of injury of the brain from concussion?" The term "concussion" by itself is vague and delusive, while that of "injury" is clear and true, and conveys at once a meaning the force of which can not be misunderstood. The word "concussion" later on may be dropped, and the simple term "injury" retained. With this starting-point, it would naturally follow that fractures of the skull in all their varieties, hæmorrhage into the cranium in all its forms, and compression of the brain, however brought about, will be regarded as complications of the one common and essential factor, cerebral injury, and not, as now, be regarded as separate and individual troubles to be dealt with independently. And even scalp wounds, the result of external violence, would assume a position in the surgeon's mind they ought to have, but have not yet attained; and consequently receive the attention to which they are entitled, not so much perhaps on their own individual account as simple wounds, but as wounds mostly brought about by direct violence applied to the cranium, and consequently liable to be complicated with some contusion of the cranial bone or intracranial injury.

THE REMOVAL OF PROLAPSED INTESTINE.

MIKULICZ ("Deutsch. Gesellsch. f. Chir.," xvii) recommends the following procedure for the removal of prolapsed rectum or intussuscepted colon in cases in which such a plan of treatment is determined upon. In one case two feet and a half of prolapsed colon were amputated, the patient making a good recovery. The patient is placed in the lithotomy position. Two strong threads are passed through the extremity of the prolapse and looped for fixation. Irrigation should be continuous throughout the operation. A transverse incision is made through the anterior part of the prolapse, going carefully through its thickness, all bleeding being checked. When the serosa of the intussusciens is cut through, exposing the serosa of the intussus-

ceptum, the two serous membranes are stitched together with a circle of fine sutures, thus closing all communication with the peritoneal cavity. Just beyond the sutures the anterior part of the intussusceptum is also cut through, and the two ends of the gut are now sutured together to the entire extent of the incision by silk threads, including all the coats. The threads are left long, and used to steady the bowel till the completion of the operation. Finally, the remaining periphery of the two intestinal lumina is secured, the numerous mesenteric vessels tied, and the union of the gut completed by the deep sutures. The line of suture is dusted with iodoform, the long ends of the stitches cut away, and what remains of the prolapse reduced. No drainage-tube or bandage is used, and opium is given for eight days.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 25, 1888:

DISEASES.	Week ending Sept. 18.		Week ending Sept. 25.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	53	15	55	15
Scarlet fever.....	68	16	68	12
Cerebro-spinal meningitis....	0	0	1	1
Measles.....	83	8	62	11
Diphtheria.....	54	17	44	11
Small-pox.....	0	0	3	0
Yellow fever.....	1	1	0	0

A Reception was given by Dr. W. Gill Wylie, on Saturday last, in honor of Dr. Graily Hewitt, of London, and on Wednesday evening Dr. Robert F. Weir and Dr. William T. Bull gave a reception at the New York Hospital in honor of Professor Esmarch.

The Eastern Dispensary.—Examinations will shortly be held by the Board of Trustees of the Eastern Dispensary of this city preliminary to making the following appointments in the medical staff: One attending physician to the Department of General Medicine, one attending surgeon to the Department of General Surgery, and two district or visiting physicians. Two hours' service daily is required of the attending physicians at a yearly salary of \$400, and the district or visiting physicians are to render two hours and a half daily service at an annual salary of \$500.

The Medico-chirurgical Society of German Physicians.—At the next meeting of this society, to be held in the Arion Building, corner of Park Avenue and Fifty-ninth Street, next Monday evening, Dr. W. Freudenthal will speak on "The Ætiology of Hernias," and Professor F. von Esmarch, of Kiel, on "Articular Neuroses." After the scientific proceedings, there will be a reception in honor of Professor von Esmarch.

Society Meetings for the Coming Week:

MONDAY, October 1st: New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Monmouth, N. J., County Medical Society (Freehold); Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, October 2d: New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy

of Medicine; Buffalo Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Broome (annual), Columbia (annual—Hudson), Orange (semi-annual—Goshen), and Schoharie (semi-annual), N. Y.; Medical Association of Northern New York (annual—Malone); Essex, N. J. (annual—Newark), Hudson, N. J. (Jersey City), and Union, N. J. (quarterly—Elizabeth), County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore, Md., Academy of Medicine; Chittenden, Vt., County Medical Society.

WEDNESDAY, October 3d: Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Philadelphia County Medical Society (regular).

THURSDAY, October 4th: New York Academy of Medicine; Society of Physicians of the Village of Canandaigua; Boston Medico-psychological Association; Washington, Vt., County Medical Society; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, October 5th: Practitioners' Society of New York (private); Baltimore, Md., Clinical Society.

SATURDAY, October 6th: Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Proceedings of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Second Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, DR. EDWARD L. KEYES, of New York, in the Chair.

Pyæmia as a Direct Sequel of Gonorrhœa.—Dr. ROSWELL PARK, of Buffalo, in this paper gave the history of a case of gonorrhœa occurring in a man, contracted a month prior to his entrance into the hospital. The urethral discharge had ceased after two weeks, and swelling of one knee had developed, which his physician had attributed to gonorrhœal rheumatism.

When he entered the hospital the left knee was much swollen and fluctuating, the right in a less degree; the patient's general condition was typhoidal. The typhoidal symptoms increased in severity; it became necessary to tap one knee because of extreme distension; cloudy serum was withdrawn. Sordes developed on the tongue, the patient became delirious, septic symptoms increased, and ended fatally. At the autopsy there was found erosion and a collection of pus at the sterno-clavicular articulation, pus in other joints, enlarged mesenteric glands, etc. The case had occurred some years ago, and the author could not undertake to say whether it had been in the first place one of specific urethritis caused by the gonococcus of Neisser. It had not yet been shown that the gonococcus could produce abscess, whatever might be its influence upon mucous membranes. Pyæmia as a direct sequel of gonorrhœa was extremely rare. In text-books this condition had often been confounded with septicæmia, endocarditis, and pericarditis. The speaker had frequently found in what were commonly regarded as normal urethræ bacteria usually present in surgical cases, and to these he thought it probable the pyæmia in the case referred to was

due. Why they did not frequently cause pyæmia in gonorrhœal inflammations he was unable to say.

Clinical Observations on Gonorrhœa, with Special Reference to *Ætiology, Duration, and Treatment.*—Dr. J. P. BRYSON and Dr. E. C. BURNETT, of St. Louis, presented the paper, which was founded on observation of 1,394 cases. The longer their experience the more were they inclined to regard gonorrhœa as a disease of special nature. The disease always began at or near the meatus. There was no case in which there was high inflammation without the presence of the gonococcus. In cases diagnosed as non-specific urethritis the patients had been granted permission to marry, and the wife had remained well; in other cases, on the other hand, men with presumable specific gonorrhœa had married in opposition to medical advice with serious consequences. In the latter cases the gonococcus was present in the discharge. This evidence of continuation of the disease might be found long after all discharge from the meatus had ceased. The greater number of gonorrhœal cases became chronic. The discharge might be present as long as eight or even sixteen years after the attack. In many cases a chronic gonorrhœa passed into a stage of quiescence until something occurred to relight it.

In the first and second stages germicidal treatment had not been successful. Astringents were of benefit in the third stage, and internally copaiba and oil of sandal-wood. They could not affirm that these agents did not produce their effect by destroying the microbes.

Retrioinjections in Gonorrhœa.—A paper on this subject was read by Dr. E. R. PALMER, of Louisville. (It will be published hereafter.)

The Use of Nitrate of Silver in the Local Treatment of Chronic Urethral Discharges.—Dr. F. R. STURGIS, of New York, in this paper took the ground that in general a urethral discharge was not chronic until after four weeks' duration. Deep injections of nitrate of silver solution had, during the last few years, attracted considerable attention. The difficulty in making the injections consisted in limiting them to the affected part. If it could be confined to the diseased tissue much pain and discomfort would be avoided. He had arranged the endoscope so that the whole canal could be illuminated, and thus was enabled to make the application just where it was needed. Under their use the granular patches became less congested, finally disappeared, and the discharge ceased. He had used as much as sixty grains to the ounce. He had also made local applications of nitrate of silver in chronic urethral inflammation after stricture had begun to form, with success.

The Diagnosis and Treatment of Chronic Urethritis, with Demonstration of Instruments.—The paper, sent by Dr. Oberländer, of Dresden, read by Dr. J. B. FORDYCE, contained a brief description of the different forms of urethritis according to the pathological appearances under the endoscope, an instrument which the author regarded as of much value in diagnosis and treatment. In stricture, as a rule, he preferred dilatation to all cutting operations. The dilating instrument, the blades of which were covered by rubber, was exhibited, together with an endoscope and electric light. A weak solution of nitrate of silver in quantity was injected. Out of five thousand cases treated, in none had there been death or severe urethral fever.

Dr. R. W. TAYLOR thought that one was liable to be deceived by the appearances under the endoscope, mistaking the mucous membrane forming a ridge in front of the tube for a papillomatous growth. The instrument was not of as much value in actual practice as one might presuppose.

The Connection between Masturbation and Stricture of the Urethra.—Dr. SAMUEL W. GROSS, of Philadelphia, in this paper referred to one published by him in 1877 first calling at-

tention to this subject. He wished again to call the attention of the general practitioner to the very common occurrence of stricture in the masturbator. Out of a total of 331 patients who were masturbators, stricture was present in 291, or in about 88 per cent. The examinations were of patients who had never had gonorrhœa nor injury of the perinæum. Of 82 solitary strictures, 65 were at or near the meatus, 13 were in the bulbous division. As a rule, the stricture was of large caliber, single, and near the orifice.

Dr. R. F. WEIR, of New York, referred to investigations which he had made about 1879, and stated that coaptations of the urethra were very common in patients who had had no venereal trouble; he had found them even in the newly born. He had therefore been forced to the conclusion that coaptations were to be expected in urethræ normal in development.

Mr. REGINALD HARRISON, of Liverpool, had not been able to satisfy his mind that masturbation had led to any permanent contractures of the urethra. He regretted having entered the room after the reading of the paper.

Dr. GROSS, in closing the discussion, said that in nine tenths of all masturbators there was marked tenderness and irritability when instruments passed over the strictures, showing that there was abnormal sensitiveness, and the endoscope demonstrated hyperæmia, which must, when long continued, lead to the formation of stricture.

Notes upon the Prognosis of Organic Stricture of the Urethra.—Dr. E. HURRY FENWICK, F. R. C. S., of London, sent a paper on this subject, which was read by Dr. Taylor. The author impressed the importance of systematic examinations of the residual urine in cases of organic stricture, and gave the results in seventy-five cases under his observation. Residual urine existed in most cases of stricture, and ought to be measured; its removal was of value in enabling the vesico-ureteric muscles to regain power and in preventing chronic cystitis and calculus.

The Operative Treatment of Hypertrophy of the Prostate, with Stereopticon Demonstration of Specimens.—Dr. F. S. WATSON, of Boston, read a paper with this title. He pointed out the variance of surgical opinion regarding the propriety of radical operative treatment of any sort, and suggested a rationale which should underlie operative treatment. There were two sorts of data—the anatomical and clinical. Stereopticon views of thirty-four anatomical specimens were shown and three points bearing on operative treatment were made manifest: 1, the distance from the junction of the membranous and prostatic urethra to the most distant part of the median enlargement within the bladder, which he called the perineal distance; 2, the form of the median enlargement; 3, whether the bladder was of small capacity and non-distensible, or the contrary. On the nature of these three factors the choice of operation depended. If the perineal distance was not greater than two inches and three fourths or three inches, the enlargement could be operated upon through the perinæum. But if the median enlargement was salient, it could be better approached by the suprapubic operation. The distensibility of the bladder made possible the modern technique of the suprapubic operation. In about two thirds of the thirty-four cases the obstacle could have been successfully reached through the perinæum. This operation had proved the safer. Radical treatment had been less disastrous than palliative. The author had operated in two cases, with one marked success; the other patient had died as a result of the operation.

Prostatotomy for Enlarged Prostate at the Age of Forty-two Years.—Dr. ABNER POST, of Boston, read the history of an unusual case of prostatotomy occurring in a man aged forty-two, the prostate being very hard, its division being audible,

and attended with difficulties. The patient had dated his urinary troubles back twenty-one years. Prostatotomy had afforded complete relief. The enlargement was not cancerous; its exact nature had not been determined.

The History of the *Filaria Hominis*; its Discovery in the United States, and especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis.—A paper on this subject was read by Dr. W. M. MASTIN, of Mobile. (It will be published hereafter.)

Case of Removal of Both Testicles for Recurrent Carcinoma.—Dr. F. W. ROCKWELL, of Brooklyn, read the paper. (It will be published hereafter.)

Some Points in the Differential Diagnosis of Bladder and Kidney Affections.—Dr. A. W. STEIN, of New York, read the paper. He prefaced his remarks with the statement that in certain obscure ailments of the urinary tract the following questions not infrequently arose: Were the bladder symptoms due to renal disease? Were the kidney symptoms due to vesical disease? Were they independent of each other? and, When one kidney was involved, was it the right or the left? In answer to the latter question, various methods for collecting the urine from one ureter were discussed, and a new catheter for introduction through the urethra into the bladder and to cover the mouth of the ureter was presented. It had been tried only on the dead subject, and was believed by the reader to be practical.

The PRESIDENT referred to a case of large diseased kidney on one side, while the other was pronounced healthy by Freund, who had based his judgment upon examination of urine collected from the ureter. Freund advised removal of the enlarged kidney, and when the patient returned to New York the speaker had done the operation, not, however, without misgivings as to the condition of the other organ. For some days after the operation the patient had done well, but he had died after a few weeks, when the remaining kidney was found cirrhotic.

Demonstration of a Perfected Evacuator, and an Improvement in the Method of Removal of Debris from the Bladder.—Dr. FESSENDEN N. OTIS, of New York, read the paper, and presented the latest evacuator of Professor Bigelow and a very recent one of Sir Henry Thompson, and contrasted them with his own, which he had further improved within two years. An important advantage of his own was its light weight, being ten ounces empty and eighteen filled with fluid, while the weight of Professor Bigelow's empty was twenty-four ounces, and of Sir Henry Thompson's twenty-seven ounces. His own required no wire screen or valve to prevent return of debris into the bladder.

Stone in the Bladder in Connection with Splenic Leukæmia.—A paper with this title, by CHARLES WILLIAMS, F. R. C. S., of Norwich, England, was read by Dr. Taylor (see page 342).

Litholapaxy in Male Children.—Surgeon-Major D. F. KEEGAN, of Indore, Central India, contributed a paper on this subject (see page 320).

Operations on the Kidney.—Dr. WILLIAM H. HINGSTON, of Montreal, read the paper, which was discussed in connection with the next paper.

A Case of Nephrolithiasis, complicated with Hydro-nephrosis, in which Lumbar Nephrotomy was performed.—Dr. FRANK W. ROCKWELL, of Brooklyn, reported the history of a case which illustrated in a marked degree the difficulties and uncertainties of exploratory operations as practiced in the lumbar region, and certainly for small calculi in normal or slightly diseased kidneys. The man had first consulted him in the fall of 1887. When a boy he had suffered from hæmaturia and a calculus had been passed. When seen by Dr. Rockwell

he had renal colic, hæmaturia, and at times there was fullness in the right flank. Retention of urine had occurred more than once. Dr. Keyes had seen the patient in consultation, and had advised, if other measures failed, an exploratory operation. The posterior incision was chosen, and performed in December. There was much difficulty in reaching and palpating the kidney. At one time the reporter thought he felt a hard substance in the kidney, but was unable to feel it again, and the wound was dressed. The patient continued to suffer until the latter part of January, when much relief followed the passage of a stone. Again in March another fragment was passed, but he had not yet entirely recovered from his former symptoms. Dr. Rockwell thought that if what he had felt during palpation of the kidney was the stone, he had probably hastened its passage down the ureter.

A Renal Calculus removed by Lumbar Nephrotomy.—

The specimen was exhibited by Dr. PARKS, of Chicago. He had first seen the man last May, and learned that he had suffered from intermittent attacks of pain and symptoms of renal calculi for ten years, the pain always being referred to the neighborhood of the left kidney. The symptoms in general pointing to renal calculus, he had performed lumbar nephrotomy. There was great difficulty in fixing the kidney so as to carefully palpate it. He punctured the kidney in various places, but was still unable to feel the stone, and was about to give up the operation, when he again introduced his hand, and on the posterior surface of the kidney felt a hard substance. The stone was rough, had numerous facets, and was grasped tightly on all sides, but he was enabled to remove it by a pair of slender forceps. The man made a good recovery and was quite relieved. He had performed nephrectomy in one case, removing a tubercular kidney as large as a man's head through a lumbar incision which was extended around in front of the anterior superior spinous process of the ilium, and the point of the last rib was tilted out of the way. Regarding the diagnostic significance of the circumscribed area of resonance referred to by Dr. Hingston, he, with others, had mistaken an ovarian tumor for a diseased kidney because of the presence of resonance limited to the inferior right iliac region.

Sir WILLIAM McCORMACK mentioned the case of a young man who had had symptoms of renal calculus sufficiently distinct to lead a surgeon in St. Bartholomew's to undertake nephrotomy by the lumbar incision, but no stone had been found. The patient afterward came under his care at St. Thomas's when the symptoms were very severe, but, in view of the negative results of the former operation, he had hesitated to interfere. He sent the patient away, but he returned after a time, and, as the pain was referred more particularly to a point corresponding to about the middle of one ureter, he explored this canal, but found nothing and closed the incision. He learned that the patient afterward passed an examination for admission to the army, and was then perfectly well.

Dr. R. F. WEIR, of New York, had done two nephrectomies, three nephrotomies, and had had one case similar to that narrated by Dr. Rockwell. In this case the kidney had been thoroughly palpated, but no stone could be felt, and the operation was abandoned. Within twenty-four hours afterward the patient had been entirely relieved, and the urine had been changed only in being somewhat bloody and containing a large number of uric-acid crystals. He was rather loath to believe, therefore, that the trouble was due to only a recently formed calculus. Yet it was known that the handling of the kidney in searching for a stone, none being found and none being passed, had in several instances resulted in relief of the patient. Regarding Sir William McCormack's case, he suggested giving the patient the trial of drainage before proceeding to nephrectomy. While he

agreed at present with Dr. Lange in his preference for the posterior incision in cases of danger from sepsis, yet his conviction was not so firm but what he might soon change it. Might not the peritonæum be stitched to the edges of the wound in a way to prevent danger of septic matter entering its cavity?

Dr. ANNANDALE, of Scotland, had cut down upon the kidney and palpated for stone in a number of cases, and, finding none, had closed the wound, yet the patients, excepting one, had afterward been relieved of their symptoms.

The discussion was closed by the author.

On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis.—Dr. GEORGE CHISHMORE, of San Francisco, read the history of the case, that of a man who had peculiar aggravation of conditions related to his kidney affection when reaching the high points in the mountains on a journey from San Francisco to New York, in which latter city his case had terminated fatally. The paper was a pioneer one in this line of investigation.

Resume of an Experience of Seventeen Years with the Operation of Dilating Urethrotomy.—Dr. F. N. OTIS, of New York, in this paper traced the successive improvements made in his dilating urethrotome since its invention in 1872, showed the advantages of this method of treatment over previous and other more recent methods, and the discoveries which it had led to, as the relative size of the penis to the urethra. He had used the dilating urethrotome in more than a thousand cases, and had never had a death nor abscess result. He used only the short, straight instrument, and pointed out the dangers of the other, which instrument-makers would not take off the market. The incision should be exactly in the median line, on the roof, not on the lower surface. As to the radical cure of stricture by this treatment, he had tabulated a number of cases which he had been able to trace some years after the operation, and in a large percentage there had been no recontraction. The first case he ever operated upon with the dilating urethrotome presented recently the same size of the urethra as after the operation years ago.

Case of the Bowel ending in the Urethra of a Child Four Weeks Old; Relief by Operation.—Dr. ARTHUR T. CABOT, of Boston, presented the paper. When the child was constipated the urine became slightly discolored with feces, showing that since the operation for the formation of an anus there still existed a small communication between the bowel and urethra, which, however, caused no inconvenience. Whether a further operation would be necessary as the child advanced in age time would determine.

Perineal Litholapaxy.—Mr. REGINALD HARRISON, of Liverpool, read a paper and related some cases in which, instead of crushing and removing stone through the urethra, he had found it advisable to make external perineal urethrotomy, then introduce the finger to stretch the vesical urethra, crush the stone with forceps and flush out the *débris*, and afterward drain. This procedure should be revived at this day in some cases in which the bladder affection gave rise to the stone rather than the reverse, and in which recurrence of stone could be predicted were ordinary litholapaxy resorted to.

An Unusual Case of Urethral Calculus.—Dr. HARVEY G. MUDD, of St. Louis, related the history of a case occurring in a negro, aged forty-eight, who had passed a stone when a youth. He had had trouble with urination five or six years; there had been blood in the urine. Having difficulty with urinating, and recognizing some obstruction in his urethra, he had been in the habit of pushing a knitting-needle down the urethra in the hope of freeing the passage. "It felt as if it struck a lot of bones." Forward of the bulb Dr. Mudd had removed by external urethrotomy a stone, weighing 281 grains, three inches

in circumference. Several smaller stones, altogether weighing 82 grains, were removed posteriorly and from the bladder. The patient had recovered from his septic symptoms, and was now healthy.

"Syphiloma of the Vulva," a paper by Dr. J. NEVINS HYDE, of Chicago, was read by title.

Officers for the Ensuing Year were elected as follows: Dr. R. W. Taylor, of New York, president; Dr. John P. Bryson, of St. Louis, vice-president; Dr. Arthur T. Cabot, of Boston, secretary. The next meeting will be held at Newport some time in May, the exact date to be fixed by the council.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

First Triennial Meeting, held in Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, Dr. JOHN S. BILLINGS, of the Army, in the Chair.

(Concluded from page 329.)

Cerebral Localization in its Practical Relations.—In a paper with this title Dr. CHARLES K. MILLS, of Philadelphia, Pa., gave the history of the development of this branch of medical science. He mentioned as among its practical applications various results now obtained in psychological medicine and medical jurisprudence, and in therapeutics. He spoke of the results of trephining for the relief of insanity, with the excision of diseased areas in the cortex, guided by certain subjective signs, such as hallucinations of sight and hearing, whose localization in the cortex was known. Cerebral localization led to diagnosis, and directed operation, in a class of cases comprising brain tumors, dural or intracerebral; cysts; fractures of the cranium; abscesses; hæmorrhages within or upon the brain; and discharging cortical areas. Taking up tumors, he referred to twenty autopsies in which he had found one half of the tumors accessible to operation, and fully a fourth in which operation would have led to recovery. He believed from his own experience that old gummata and sometimes tubercular growths could be excised. The conditions justifying the removal of brain tumors related to their site, accessibility, solitariness, and size. In fractures where the amount and sort of damage could not be told from the outside, cerebral localization might often guide to it. Hæmorrhages of both the cortical and the meningeal series of blood-vessels, if the clot were located, might be removed, even from about the ganglia and capsules; but not where the ventricles were inundated. The best point from which to operate in these cases, he had concluded from dissections, was the anterior portion of the first or second temporal convolution. Epilepsies, originally caused reflexively from some peripheral irritation in the body, as in the scalp, the eye, the nose, a tooth, a cicatrix, but which had become centrally located in a discharging cortical area, he believed in treating by excision of that area. If it were asked "what areas of the brain were accessible to the surgeon?" he would rather change the question to "what were inaccessible?" for the latter were being rapidly narrowed down. Even the ventricles could be reached. Only the middle regions of the base of the brain, with the bordering convolutions, the corpora quadrigemina, and the pons were forbidden ground to the surgeon of to-day. As for the accessible areas, at least one successful operation was on record for each one of the ascertained centers. A localizing diagnosis could be made for lesions situated anywhere in the entire motor area, including that of phonation; in the visual area in the cuneus, causing lateral hemianopsia; in the intracerebral visual tracts; the lateral convolutions of the occipital lobe; or possibly in the angular gyre.

Approximate localization sufficient for surgical purposes

could be made, by the study of positive symptoms aided by exclusion and differentiation, for lesions in the cerebellum, the prefrontal lobe, the temporal lobe, and sometimes in the intracranial portions of some of the cranial nerves.

He considered the old method of dividing the motor area into perpendicular zones as insufficient; the horizontal subdivisions were quite as important, of which seven or eight were distinguishable. The surgeon must be guided to them by a study of the initial symptoms of the serial order of combined movements, the extent and character of the temporary paralysis following the seizure, and of that which persisted.

He agreed with Ferrier that the center for eye and head movements was in the second frontal gyrus, and that often when the spasm began with a turning of the eyes and head at once, this convolution was pointed to. But the reason why paralyzes of the oculo-motorius were not permanent, even when lesions were known to exist here, was because the oculo-motor nuclei had such peculiar connections at the base of the brain. He thought that the movements of the orbicularis palpebrarum had a separate center not far below the oculo-motor center.

Among the sources of error in localization were reflexively caused disturbances, especially those coming from the dura mater. The unilateral convulsions of uræmia and lead poisoning, and the symptoms of hysteria and hystero-epilepsy, needed careful exclusion. A comparison between these and the true cortical epilepsies had been made by Franck, showing some points of difference.

Some of the ascertained sensory areas were the gyrus fornicatus, the hippocampus, the precuneus, and the lateral postero-parietal region. He believed there was a region for general sensation, neighboring and closely connected with and yet separate from the allied motor areas. It included centers for touch, pain, temperature, and perhaps for pressure and muscular sense, in different parts of the body. He believed with Bechterew that the loss of sensation in animals in which the motor area had been destroyed was apparent and not real; the animals felt pain but were unable to show it by any movement of the injured part. He thought that not much reliance could be placed on disturbances of sensation as a means of localization. The data were not yet sufficient.

Peculiarities in the configuration of the cortex and its gyres, in the parieto-occipital region, in the position of the angular gyre, and even of the central and parieto-occipital fissures, and the fissure of Sylvius, did not, as a rule, cause confusion in operating on the motor areas if the rules of Broca, Thane, and others were followed.

Surgery of the Brain, based on the Principles of Cerebral Localization.—A paper with this title was read by Dr. ROSWELL PARK, of Buffalo. (It will be published hereafter.)

Dr. DAVID FERRIER, of London, said that it had long been a cherished idea with him that, with an accurate determination of the functions of the brain, some of the most distressing ailments of mankind would one day fall under surgical treatment. He reviewed the difficulties attending the introduction of cerebral surgery to the profession; it had long been in ill repute. He read an extract of a scathing criticism published in the "Lancet" not very long since on the uselessness of labors in this direction, insisting that the skull would never be opened like the abdomen, that only lives forfeited would be the result from prosecuting science in this direction, and ridiculing any conclusions reached from experiments on the brains of monkeys. The speaker warned his hearers against the danger of overdoing, and reminded them that danger was not solely from infection. He had seen several unsuccessful operations and deaths, though recoveries predominated. He was disappointed at the results in Jacksonian epilepsy or discharging irritative

lesions of the cortex. There were some cures and some relapses. The cure of some injuries left a worse state in their place. Thus hemiplegia and loss of speech might outweigh all the gain. Much remained still unaccomplished in locations and diagnosis. There were still unknown regions in the brain; the source and location of thought were still mysterious. Differences in opinion as to localizations only showed a healthy activity of investigation.

Mr. VICTOR HORSLEY, of England, speaking from the results of his own experiments, but equally from those of his colleagues, Professors Schäfer, Beevor, Gotch, and Dr. Semon, knew no way of being of service to them in speaking of so enormous a subject, except to take up a single line of investigation and give in detail its latest developments. He believed that in the motor region three functions were represented: slight tactile sensation; the muscular sense, so called; and, predominantly, movement. He called attention to the fundamental principles that underlay our information in this direction. We must understand that these functions are closely wrapped up together, and correspond to the same parts of the body. Furthermore, that in each particle of the cortex are represented, in a varying degree, all sections of the body. Though he believed with Dr. Hughlings Jackson that the large cells of the fourth layer were the chief site of movement impulses, it seemed to him certain that the small gray cells of the uppermost layer also had tactile and muscular sensation. Experimental and clinical evidence to this effect he had published at length.

He discussed divisions of the cortical motor area as corresponding to parts of the body, but also to different kinds of motion in the same part, such as flexion and extension.

Dr. BEEVOR said he believed that by laborious investigation it would be possible to split up these motor centers into very minute subdivisions. They divided up the motor area into squares measuring only two millimetres, and excited each one with the weakest faradaic current which would give any perceptible movement. As an illustration of their results attained, he said the cortical representation of the movements of the thumb was found to be focused in front of the lower end of the intracranial sulcus, and to extend over a large part of the upper-limb area, gradually diminishing in intensity as they passed upward. Now the shoulder and the thumb movements were the two most important ones in the arm (or upper limb). They found the shoulder represented in a part of the upper-limb area exactly opposite to that of the thumb, and, conversely to it, diminishing in intensity downward.

The study of the limitation of the whole area of representation of a given part was most important. Dr. Ferrier had always believed in fixed boundaries to the centers for the different movements. He regretted that he could not now follow his honored teacher here. His experiments had shown him that there were no hard and fast lines of separation, but that a given movement had a focus surrounded by a diffused area of somewhat indefinite extent, blending with other adjoining areas. There were also border centers which represented combined movements from both areas. Dr. Ferrier himself had called attention to one center from which movements of both limbs arose. There were many others; thus, for combined movements of the face and arm there was such a border center, and two "signal" symptoms would result from a lesion at that spot.

Another point to which attention was called was that representation of the larger muscles, such as those of the trunk of the body, was at the top of the motor area; that of smaller muscles, as of the eye, was lowest.

Speaking of differences in location, according to character of movement, he gave two out of many examples. At the upper part of the upper-limb region extension of the elbow is repre-

sented, in the lower part of the same region flexion, and between the two there is confusion or various gradations of combination. The second example, and especially interesting to him, was their knowledge as to the exact spot where extension of the wrist was represented mainly—that is, the anterior border of the upper-limb region. This gave him peculiar pleasure, because they were already in a position to show that extension of the wrist must precede every fine movement of the limb.

To prevent errors from the use of monkeys of different tribes in his experiments, he had for the past two years confined himself to a single species, and the one nearest to man in cerebral configuration—viz., the bonnet monkey, or *Macacus sinicus*.

Referring to epilepsy of cortical origin, he said it was exceedingly necessary to securing recovery that not only the damaged area be completely excised, but also a rim of surrounding degenerated cells. Else there would be a relapse.

Cortical epilepsy had several stages—a preliminary aura, a tonic convulsion, then a clonic period, succeeded by the stage of exhaustion or paralysis. For five years he had been trying to discover which of these different sorts of spasm came from the cortex alone and which might arise in the spinal system, or whether both tonic and clonic spasm came from the cortex. By tapping the pyramidal tract in its dorsal portion, and introducing a delicate electrometer into this connection between the cortical and spinal motor centers, above the latter, they were able to see what sort of a line of variations the electrometer would give, from an electrical irritation of the cortical motor area alone, as it streamed down the pyramidal tract. Of course, they knew nothing about nerve-energy except its speed of transmission, but it was perfectly justifiable to assume that variations in current would correspond to those in nerve-impulse. They obtained thus a tracing exactly similar to that of a convulsed muscle in epilepsy: a marked level up-rising indicating the tonic stage, succeeded by a sudden fall and pause, then little waves corresponding to the clonic stage, then a full stop, indicating exhaustion. So it was proved that the whole of the character of a convulsion might be due to the cortex alone.

Turning to the subject of cerebral surgery, he advised marking the point determined on with a fine drill through the scalp. Then he trephined a small exploratory opening an inch in diameter. Then with a large circular saw (which he afterward exhibited) he cut nearly through the skull, separated the dura with an instrument passed through the small opening, then with a heavy brim forceps, carefully cleaned, he cut away the area of bone deeply marked out by the circular saw. Opening of the dura was, in his opinion, always essential to making an exploration complete. Faradaic stimulation of the cortex was often of service in diagnosis, and was more employed in America than in Europe. One practical point in connection with this aid to diagnosis was that if the carbolic or bichloride solution came into contact with the cortical surface a few times it would so benumb it that not many points would remain sensitive to faradaic stimulation. He advocated the giving of morphine, ergot, or cocaine to lessen the flow of blood to the head and prevent parenchymatous oozing, but insisted that catgut ligatures, tied with gentle and even traction on the two ends, be applied wherever possible. Plugging the wound always gave disastrous results. It was particularly dangerous to operate on a patient under drug influence, especially that of bromide of potassium. Shock was not to be feared in the condition already existing when such patients reached the surgeon. Early operation was best. It required much courage, for the operation was always attended with liability to death of the patient. Where the epilepsy returned he believed it was on account of incomplete removal of the diseased area, and of a rim of surrounding cells at

least one centimetre in thickness. He was alive to the danger of overdoing in certain cases, but also thought there was considerable danger of our being unduly influenced in our opinions by statistics.

Dr. W. W. KEENE, of Philadelphia, remarked that the body had three cavities—abdomen, chest, and cranium—each containing, certainly in the case of the two former, various organs with different functions, and with diseases corresponding. He thought that it was proved now that the head did not, as once supposed, contain a single organ, but many viscera and sites for independent diseases. Overdoing was a liability in its surgery, as happened in abdominal surgery, as in the removal of ovaries and tubes, and the repair of lacerated cervix. Boldness had replaced timidity in abdominal as it would in cerebral surgery, with successes corresponding, as experience was gained. Opening of the cranium would become justifiable, even for securing diagnosis. Cases had occurred where trephining brought relief to an unknown lesion resulting from a fall followed by intense headache, and in some unknown way.

Dr. R. F. WEIR, of New York, mentioned ten cases of his own, of various parts, which showed that forbidding operation, as did Bergmann, on patients in coma and with enormous tumors, was without basis, as both were successfully done now. He spoke of the relief to the pressure of hæmorrhage, etc., by merely removing a piece of the skull, sometimes enabling patients to recover. As to the limits of interference, sinuses could be stripped up, tied, even wounded, the anterior brain lifted until the clinoid process was exposed; the foramen magnum he had felt with his finger, and the floor of the middle fossa could be reached nearly as far as the foramen ovale. He had recently tapped a cerebral abscess on the under surface of the sphenoid, just anterior to the foramen rotundum, being led to this region by evidences of necrosis. He believed many other portions of the brain could be reached if we had information about them from the neurologists.

Dr. M. ALLEN STARR, of New York, being called on, gave a synopsis of his paper, which he decided not to read, the time being short. He called attention to the fact that the leading discoveries in cerebral localization have been attained by comparing large numbers of cases of localized brain diseases in man. He thought progress in the future would depend on careful recording by physicians of all cases of cerebral disease. But a proper record required an accurate examination, and especially in cases of disturbance of speech.

He thought it was too common to refer the representation of speech almost solely to Broca's center, in the third left frontal convolution. The fact was that only the motor factor in speech production was located here. In a number of the convolutions posterior to it there were centers just as necessary to that compound of faculties connected with intelligent speech production. Wernick first showed a distinction between sensory and motor aphasia and in a few instances located the former in the first temporal convolution. Finally, Charcot had carefully separated and distinguished the four elements of speech. He had recognized an auditory memory by which we grasp the sense of words heard, a visual memory or picture of written words, a motor memory of articulation, and another motor memory of the movements used in writing. Each, being distinct, can be lost and leave the remainder intact. So we have word-deafness, word-blindness, motor aphasia, and agraphia, independent of each other.

Another important distinction was that speech and thought were independent of each other. We had memories of shape, form, sound, odor, taste, and color connected with bodies, which might furnish thoughts about objects seen, felt, heard, tasted, or smelt. Yet, if speech centers were impaired, no name might

be recognized as having a relation to them. Or memories of odor, taste, or sound being lost, perception of an object might awaken no recognition of its nature or use. This condition, termed apoaxia, was found with aphasia in some cases, in others not.

As for localizations, motor aphasia was produced by lesion in Broca's center, or in the tract connecting that center with its cranial-nerve nuclei. In the latter case it was temporary. The site of the lesion giving rise to agraphia was unknown. Word-deafness was due to lesion in the first temporal convolution, and was associated with word-blindness when the lesion extended to the supramarginal convolution and angular gyrus. The condition of apoaxia arose from lesions in or beneath the angular gyrus. Motor agraphia was produced by a lesion whose site was unknown.

The integrity of tracts connecting the memory centers of various kinds was also necessary to speech, and could be tested; thus by having a patient repeat or write words spoken to him, or copy or read aloud from a printed page. Investigations in this line were incomplete as respected localizations. Lichtheim had described some lesions in these tracts.

The speaker concluded by showing how accessible to surgical interference the speech centers were, and urged the examination and recording of all cases of speech disturbance for the reasons given at the outset of his remarks.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of September 6, 1888.

Dr. J. C. DA COSTA in the Chair;

Dr. J. M. BALDY, Secretary.

A Year's Work in Oophorectomy.—Dr. WILLIAM GOOD-ELL, in a paper with this title, stated that during the year 1887 he had had nineteen cases, with one death; but, including those that he had since had, there was only one fatal result in twenty-nine cases. The cause of death in this fatal case was uræmic coma from suppression of urine. How far the administration of ether was to be blamed for this renal complication he was not prepared to say, but he was inclined to think that chloroform was not so liable to cause congestion of the kidneys. The operation was performed for diseased ovaries and tubes, which were greatly crippling the patient. The eighteen successful operations were performed for the following reasons and with the following results: Uterine fibroids: cured, 5; improved, 1. Menorrhagia and ovaralgia: cured, 2; improved, 1. Ovaralgia: cured 3; improved, 1. Epilepsy: improved, 1. Hystero-neurosis: cured, 1. Insanity: unimproved, 2. Pseudo-muscular hypertrophy: unimproved, 1. In his experience, the removal of the ovaries for uterine fibroids was almost always followed by a cure—that was to say, menstruation ceased, the tumor rapidly lessened in size, and no further inconvenience resulted from bulk pressure. Of the three cases of menorrhagia associated with ovaralgia, the lack of complete success in one was due to the fact that only one ovary could be removed. The other ovary was so matted in organized exudation as not to be distinguishable. The failure in one of the cases of ovaralgia was due to the persistence of menstruation after a thorough extirpation of both ovaries. This was a very rare result, but it would occasionally happen. Menstruation usually ceased in these cases after the lapse of a few months.

In the case in which the ovaries were removed for epilepsy the result had not thus far been a cure, but the attacks occurred at longer intervals. Hardly time enough had elapsed for the woman to reap the full benefit of the operation, for she still had regular catamenial molimina, accompanied by bloody expectora-

tion. Time enough had not yet elapsed to decide whether the two insane patients would be improved or be cured by the operation. Each one was an invalid and each one became physically well, but not mentally so. In the speaker's experience, which had not been a small one, those cases which exhibited aberration of intellect only during the menstrual periods would almost always be cured by the removal of the ovaries. But cases of insanity in which the hallucinations were continuous, yet much exaggerated at the catamenial periods, were by no means so likely to be cured by the operation, although they were generally very much improved. In any case, about two years' time must elapse before the nerve perturbations of this artificial change of life wholly disappeared, and a cure should not be expected before that lapse of time. What was true in mental cases and in purely nervous ones was also true in a measure when even coarse lesions of the ovary were found. Hence the surgeon must not look for full results, or for complete freedom from groin-aches and pelvic pains, directly after the removal of even diseased ovaries and tubes. He must wait patiently for the ovarian nixus or habit to cease—until, in fact, the menopause had been wholly and fully established in every way.

In the foregoing nineteen cases the spray was not used, but every other antiseptic detail was carefully carried out. The pedicle was tied with silk; the wound was closed by the same material, and dressed with gauze dipped in a glycerole of carbolic acid. Drainage was employed but once, and that in the fatal case, but this had nothing to do with the issue. Eleven of the cases were treated at his private infirmary, seven at the Hospital of the University of Pennsylvania, and one at the patient's own home.

Dr. H. A. KELLY liked the moderate tone of the paper just read. He believed that here as in other fields of work we must be often satisfied with relative results. He liked the term "ovaralgia" now better than he once did. Until we were better able to differentiate the exact nature of the lesion in some of these cases, he thought the term "ovaralgia," used generically, was a good one. He had had a rare case of salaam convulsions which had been treated for a long time. He had been called in to decide the advisability of an operation, and had refused to remove the ovaries. Two years later the ovaries had been removed and the patient cured. There did not seem to be any distinct connection between the pelvic and the general condition.

Dr. M. PRICE asked Dr. Goodell if in these operations he had ever noticed on ligation any change in the number of the heart-beats? He had had several patients in whom, on the evening of the day of operation, he had found the pulse as low as 48. He had noticed somewhere that an operator found a drop of the pulse from 80 to 35 on ligating the ovarian nerve. Since then he had had the pulse-beats counted on a number of patients at the time of the ligation, and had found a drop of only 4 or 5 beats at most.

Dr. J. PRICE said that Dr. Johnston, of Danville, Ky., had dwelt on the matter of slowing of the pulse very fully. He thought that the explanation of continued pain after an operation was to be found in the adhesions of the intestines, etc. Some of his most satisfactory results had been obtained in cases of extensive adhesions. In a recently reported case the patient had complained of agonizing abdominal pain. An adherent omentum and a knuckle of intestine had been separated and complete relief obtained. He had operated on a number of cases where the only lesion found was a general adhesion of the whole mass of intestines. He had thoroughly separated them and had obtained most satisfactory results. Mr. Tait had repeatedly reoperated to free adhesions. He felt that operation for nervous disturbances was of very doubtful benefit, and he

never operated unless he found actual disease. He preferred handing the patient over to others.

Dr. M. PRICE related a case in which the whole trouble had been due to adhesions. It had been supposed to be a case of gall-stones. No disease and no gall-stones had been found, but the intestines had been matted together. The adhesions had been released and no pain had been felt afterward.

Dr. JOSEPH HOFFMAN said that Dr. Price had referred to lowering of the heart-beat after application of the ligature. In a case of his own the pulse—which on the day of operation, before ether had been given, had been 120—had gone down in a few hours after the operation to 58. After ten days it rose to 80. This low register of 56 to 58 had been sustained even in spite of the temperature being 101° or 102°.

Dr. B. C. HIRST had operated on a case in which a small portion of one ovary was left. The patient had ceased menstruating even in spite of the part left behind. A stitch had passed through the remaining piece.

Dr. W. S. STEWART wished to know the effect of removal of both ovaries on menstruation; if, at the time it should occur, there were any evidences, such as acceleration of the pulse, etc., as seen at the menopause.

Dr. GOODELL said that he had referred to the point suggested by Dr. Stewart in his paper, and he said that just such symptoms appeared in these cases as appeared after the natural menopause. The full results were not obtained until after these ceased. He had never noticed a fall in the pulse-beat as referred to, but he had often seen serious collapse follow the pinching of the ovary. He had seen the temperature fall to 97°, and in one case below this. He thought that a counterfeited aneurysm was by no means an infrequent symptom of ovarian disease. He had had a patient from a distance suffering from ovarian enlargement, aortic pulsations, and other nervous disturbances, for which he had prescribed. Afterward a local surgeon had insisted that the patient had aneurysm. A second examination convinced him that such was not the case. This was afterward made evident by the patient passing through an exceedingly difficult confinement safely. There were two conditions in which he was willing to operate for the removal of the ovaries, although he found no disease. One was epilepsy, the other was insanity, for in these cases a woman should never conceive. He believed that the State should interfere to prevent men and women who suffered from epilepsy or from insanity from getting married. Indeed, he was not sure that the day might not come when by act of legislature an insane man would be castrated and an insane woman would have her ovaries removed. He had had a good deal of experience with removal of the ovaries for insanity, and had had some happy results; on the other hand, he had been disappointed at times. In cases of epilepsy he had not had so much experience. He wished that gentlemen who had had such cases would report them.

Dr. C. M. WILSON had had three cases such as spoken of by Dr. Goodell. In two the result had been negative. One patient had been apparently benefited for some months, but recent reports indicated that there was a gradual relapse into the former condition.

Dr. KELLY had, about three years ago, operated on a girl with a brachial paresis, resulting from infantile palsy, with also epileptic attacks, pre- and post-menstrual in character. For some months there had been no improvement, but lately she had become better. Dr. Kerlin had remarked to the speaker that if in a good many of these cases of hopeless idiots operations were performed removing the respective organs during the period of active growth, they would not develop some of their worse features, and would be more easily managed.

Dr. J. M. BALDY had had a case which at the time of opera-

tion had looked like true epilepsy. There had been excessive pain, vaginismus, and other symptoms. The pain had been relieved, but not the vaginismus, for which a subsequent operation had been performed. The epileptic attacks had continued. They were, however, becoming much less frequent than formerly. Some two years had now elapsed.

Dr. J. PRICE had operated on a patient with double pyosalpinx and epilepsy at the menstrual period and at no other time. The recovery had been complete and the relief absolute. Some ten months after, the patient had gone to another institute complaining of pain, and had again been opened. He wished to know whether or not in these cases convulsions came on during the period in which the patient was in bed after operation.

Dr. HOFFMAN had had a case of three months' standing in which the patient had suffered from hæmatosalpinx and suppurating appendix. The patient had been having epileptic attacks. She had been entirely free from them since the operation.

Dr. STEWART said he did not think that the ovaries should be removed in all cases of epilepsy, as suggested by Dr. Goodell. He had had an epileptic patient whom he had confined several times, and whose children showed nothing wrong about the intellectual development. He had removed the ovaries of a woman suffering from epileptic seizures and she had received no benefit from the operation. She was now in an insane asylum.

Dr. GOODELL said that there was no disease so likely to be inherited as epilepsy and insanity. If Dr. Stewart lived long enough he would find the children referred to develop the disease.

Cæsarean Section.—Dr. KELLY reported the history of a case on which he had operated, April 17th of this year, delivering a living child and saving the life of the mother. The patient, a slight woman, four feet four inches in height, had been in labor two weeks, her physician, Dr. Ireland, having watched by her bedside constantly for nine days previous to the operation. The waters were discharged four days before the operation. The estimated actual conjugate diameter was two inches and a quarter, although the pelvis was so choked by general œdema and hard cellutic masses that it was impossible to recognize any structures with satisfaction, much less reach the presenting part of the child. The patient's pulse at the time of the operation was 142. The operation lasted thirty-five minutes. The after-condition and convalescence was one of comfort and rapid recovery. This made the ninth case operated on in Philadelphia, the first being by Professor Gibson in 1835—the historic case of Mrs. Reybold. Dr. Kelly stated that he had since that time also operated upon another case for a relative indication, in preference to performing craniotomy upon a living child, with the result of saving both mother and child; this question, however, of the relative indication was one of such importance, deserving such careful consideration, that he would reserve it for a more elaborately prepared paper at a future date.

The Abuse of the Cæsarean Section.—Dr. J. PRICE read a paper on this subject. As to the legitimacy of the Cæsarean section there could not be now, he said, under certain restrictions and limitations, a question. In extreme cases, where hasty operation was necessary in order to save the life of the mother, where there was impaction, or where a tumor was blocking up the uterine or the vaginal outlet, discussion or hesitation had little place, and he could operate best who had all resources at command and acted without hesitation. The real points for discussion in the light of the necessity of the Cæsarean section, in order to terminate a labor with greatest safety, first to the mother and then to the child, were, first, *the degree of contraction in the pelvis*; second, *the advancement of pregnancy*; third, *the chances for the induction of premature labor*. As to the

first, as an epitome of the latest generally received opinion, we had the statement of Greig Smith: "The operation [Cæsarean section] is said to be justifiable when the contraction is so great that we can not expect to extract the fœtus *per vias naturales*, with or without embryotomy, and save the mother. The degree of contraction is generally stated as an inch and a half, and below; but, in cases in which much distortion exists, may have an upward limit of two inches." Here, then, was a plain expression of conservative opinion as to the degree of deformity necessitating or justifying the operation. "As to the induction of premature labor," says Playfair, "there are few practitioners who would not deem it their duty to spare the mother the dangers of the Cæsarean section," this being especially true since "there is no amount of deformity, however great, in which we could not succeed in bringing on miscarriage by some of the numerous means at our disposal."

The time at which premature labor should be brought on, the speaker said, varied, of course, with the degree of deformity of the pelvis; the tables of direction had been admirably constructed by Kiwisch. Briefly, the period for induction of labor lay between the thirtieth and thirty-sixth week, and the corresponding sacro-pubic diameter varied between two inches and six lines and three inches and five or six lines. Here, then, naturally followed a discussion of the means for inducing premature labor. Of the many methods proposed at various times, the one seemingly the best was the use of the soft catheter. Its introduction well into the uterus for a distance of six or seven inches was an almost certain means of speedily producing labor-pains safely. He considered the British rule—that Cæsarean section should never be an operation of election, but one of necessity—in general terms, as the safeguard of puerperal women. Once establish the precedent that the Cæsarean section was an elective procedure in obstetrics, and thereby lay down also the principle that abdomino-uterine section was a safer procedure than the introduction of a soft catheter into the uterus before full term, and the way would be laid open to every aspirant for obstetric fame, who was the fortunate possessor of a knife, if perchance he could of himself persuade the parturient woman of the necessity of delivery by "*the new natural method of delivery*."

An axiom as to the operation was laid down by Lusk: "The precise limits at which the dangers of delivery through the pelvis rise to the level or exceed those from Cæsarean section is not easy to determine. It depends partly upon the size and ossification of the child's head, and largely upon the experience and dexterity of the operator." The converse of this proposition was true also. The greater the experience and the more careful the observation of the operator, the less frequently would he be led to resort to Cæsarean section, if he held in mind that it was an operation of necessity, not of election.

Two cases would illustrate the dangers here referred to, and the justness of these forebodings. Case I: A woman already delivered of a living child, yet living at four years. Three other deliveries at term with the forceps. All of these children dead. No attempt at premature labor. In the fifth pregnancy she was decided upon as a case for Cæsarean section. She passed into the hands of another attendant, who, after careful pelvic measurements with a consultant, decided on premature labor. The woman delivered herself, without instruments, of a child whose head had a biparietal diameter of three inches and a quarter, the period of gestation being eight months and a half, the previous measurements of the pelvis having decided upon an antero-posterior diameter of three inches and a half. Case II was an actual operation—a woman in her third pregnancy. The first child was extracted after thirty hours' labor with in-

struments, dying soon after birth. Second pregnancy: she delivered herself of a child of normal proportions *at full term without instruments*. The child was yet living. Third pregnancy: *Cæsarean section*. Recovery after protracted convalescence. Child still living.

Here were lessons full of instruction. What did they teach?

Dr. M. PRICE thought that the duration of labor had nothing to do with the choice of Cæsarean section. He had delivered a woman two weeks since who had been in labor seven days. It was an occipito-posterior position, and the cervix did not dilate more than enough to permit the introduction of two fingers. He introduced his hand, dilated the os, and applied Simpson's forceps. The delivery occupied an hour and a half, but the woman made a good recovery. Had the case been delayed a few days longer there might have been a necessity for Cæsarean section. Where there was an inflammatory and œdematous condition of the pelvis he thought there should be some forcible measures adopted for the delivery of the patient.

Dr. GOODELL thought that the title of Dr. Price's paper was not a fortunate one, for the gentlemen who were called upon to perform Cæsarean section were usually not the attending physicians, and they had had nothing to do with the previous medical attendance on the patient. He believed in the induction of premature labor, and would do it in preference to the performance of Cæsarean section. But often the patient herself would not submit to the induction of labor. Dr. Price would probably admit, one day, into the "Retreat" an Irish woman who had had the most frightful labors and who had persistently refused, from conscientious motives, to permit the induction of labor. He could conceive of cases where it would be better to perform Cæsarean section, although he had never as yet done so. Probably in some of the cases in which he had formerly opened the head he would now do the Cæsarean section. He thought a woman might go on safely in labor for an indefinite time, so long as the bag of waters had not ruptured, with very little danger to herself.

Dr. KELLY remarked that the bag of waters had ruptured four days before the operation. The pains had been very hard before this time and did not change in character afterward, although the woman soon dropped into collapse. The pelvis was so choked by hard cellulitic mass that it would have been impossible to dilate anything or reach anything above the mass. The second paper evidently referred to his case, in which the operation was performed on a relative indication in preference to craniotomy. That case he had not yet reported, reserving it for a full, careful discussion. Where any such garbled, distorted particulars had been hunted out he did not know, nor could he reply to criticisms offered in such a tone. His profession was his life, and he came here to impart, and still more to receive, information in a spirit becoming the dignity of the profession, and he would not make life unhappy by taking part in any miserable bickering.

Dr. J. PRICE said that in a long experience in the Obstetrical Department of the Philadelphia Dispensary he had had numerous cases of deformed pelvises and illy developed women, some of them very young. He would simply call attention to two typical cases: No. 1: A case in which Dr. Eliot Richardson had five times done craniotomy or complete evisceration. This woman had applied in her sixth pregnancy to the Philadelphia Dispensary and had been assigned to Dr. Joseph Fox for induced labor; in a period of five years he had induced labor three times in this patient, delivering by forceps and saving two children—one still-born. Case No. 2: Also a Dispensary patient, who in her five previous labors had had the children destroyed; the sixth had been provoked at eight months and two weeks, and she had been delivered with forceps of a fine

large male child. In a short experience at the Preston Retreat he had dealt with two cases of greatly contracted pelvis, in both of which Dr. Goodell had twice or thrice induced labor, extracting living children. Recently two cases had been sent in for induced labor or Cæsarean section. The consultants had determined on the induction of labor. Both cases had terminated favorably with living children; one of them was a forceps delivery, the other normal. These were only typical cases—but few of the many he could cite in his own experience. If Dr. Kelly was satisfied that the last case given in the paper was his second Cæsarean section, he was sure he was welcome to his knowledge, as no one else would wish to lay claim to it.

Dr. PRICE exhibited a specimen of a small male foetus, at about the third month, removed from a case of extra-uterine pregnancy. The patient was healthy and twice married. There had been numerous attacks of pain. Recovery from operation was rapid. The following week he did an abdominal section on a woman who was unconscious and removed a foetus, extra-uterine. The patient died twenty-six hours later. This was the sixth case of extra-uterine pregnancy which had developed in his practice in four weeks. One case he had gone into the country to operate on and found the patient dead when he arrived. Dr. Formad had told him that this was a very common result in his experience as coroner's physician. He also showed a dermoid cyst removed from a woman who had suffered from chronic peritonitis for years. Her physician had given her as much as a grain of morphine hypodermically and had sat up all night etherizing her to relieve her pain. She was greatly emaciated, with a rapid, feeble pulse, high temperature, and had been in bed for six weeks. The whole tumor was enucleated. No ligatures were required. Intestines separated and irrigated—glass drainage. This was the ninth day and she was rapidly convalescing.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Secondary Mixed Infection in Typhoid Fever. By Bayard Holmes, M. D. [Reprinted from the "Chicago Medical Journal and Examiner."]

Cellular Digestion; its Utility in Pathological Processes. By N. S. Davis, Jr., A. M., M. D., of Chicago, Ill. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

On the Relief of Excessive and Dangerous Tympanites by Puncture of the Abdomen. A Memoir. By John W. Ogle, M. A., M. D. Oxon., F. S. A., etc. London: J. & A. Churchill, 1888. Pp. 111.

A Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. Lauder Brunton, M. D., D. Sc., F. R. S., Fellow of the Royal College of Physicians, Assistant Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital, London. Adapted to the United States Pharmacopœia. By Francis H. Williams, M. D., Boston, Mass. Third Edition. Philadelphia: Lea Brothers & Co., 1888. Pp. 1-9 to 1261. [Price, \$5.50.]

Swine Plague, with Especial Reference to the Porcine Pests of the World. An Ætiological, Patho-anatomical, Prophylactic, and Critical Contribution to General Pathology and State Medicine. By Frank S. Billings, Director of the Patho-biological Laboratory of the State University of Nebraska, Lincoln, Neb., 1888. Pp. 4-7 to 414.

Seventh Annual Announcement of the College of Physicians and Surgeons of Chicago. Session of 1888-'89.

Some of the Advantages of the Union of Medical School and University. An Address delivered at Yale University, June 26, 1888. By William H. Welch, M. D., Professor of Pathology in Johns Hopkins University. [Reprinted from the "New Englander and Yale Review."]

Session of 1888-'89. Annual Announcement of the New York Poly-

clinic and Hospital. A Clinical School for Graduates in Medicine and Surgery.

Diffendetevi. Dott. Carlo Ruata, Prof. di Materia Medica all' Università di Perugia.

Annual Report of the Commissioner of Pensions for 1888.

A Report of Cases (Surgical and Medical). By J. Harris Jones, L. R. C. P. Edin., etc. [Reprinted from the "Lancet."]

Pathogénie et traitement de la kérato-conjonctivite phlycténulaire (ophthalmie des scrofuleux). Par le Dr. V. Augagneur, Agrégé à la faculté de médecine, etc. Lyon: Vitte & Perrussel, 1888. Pp. 5-30.

Sixth Annual Announcement of the Medical Department of Niagara University, Buffalo, N. Y. Session of 1888-'89.

A Eulogy upon Cornelius Rea Agnew. Read before the New York Academy of Medicine. By T. Gaillard Thomas, M. D. By appointment of the Council, June 7, 1888.

Transactions of the State Medical Society of Arkansas. Fort Smith, 1888.

Sur la pelade; nature, transmissibilité, origines, modes de propagation et de transmission, prophylaxie publique et privée. Par M. Ernest Besnier, Membre de l'Académie de médecine, etc. Travail lu à l'Académie de médecine dans sa séance du 31 Juillet, 1888. Paris: G. Masson, 1888, pp. 5 to 48.

Considérations sur le traitement du catarrhe chronique des fosses nasales. Par le Docteur Léonce Lacoarret, à Salies-de-Béarn. Paris: Octave Doin, 1888, pp. 11-13 to 150.

Eighth Annual Report of the State Board of Health of New York, Transmitted to the Legislature, February 27, 1888.

Report of Ten Cases of Pleuritic Effusion with Aspiration of the Chest. Fourth Series. With a Case of Injection of Carbolyzed Iodine into a Lung Cavity. By F. Peyre Porcher, M. D., Charleston, S. C. [Reprinted from the "Transactions of the South Carolina Medical Association."]

Transactions of the Texas State Medical Association, Twentieth Annual Session, held at Galveston, Texas, April 24, 25, 26, and 27, 1888.

Intorno ad una forma speciale di febbre remittente palustre. Lezione clinica del Prof. Dott. Tommaso Senise, Raccolta dal Dott. Egidio Guerrieri. [Estratto dagli "Annali clinici dell' Ospedale degli Incurabili."]

Chemical Experiments for Medical Students, arranged after Beilstein. By W. S. Christopher, M. D., Demonstrator of Chemistry, Medical College of Ohio. Cincinnati: Robert Clarke & Co., 1888. Pp. 6-7 to 84. [Price, \$1.]

A Case of Poisoning by Sulphate of Atropia; Recovery. (Read before the Medical Society of the District of Columbia, March 28, 1888.) By Llewellyn Eliot, M. D. [Reprinted from the "Journal of the American Medical Association."]

Physicians' Interpreter in Four Languages. Specially arranged for Diagnosis by M. von V. Philadelphia: F. A. Davis, 1888.

A Text-book of Human Physiology. By Austin Flint, M. D., LL. D., Professor of Physiology and Physiological Anatomy in the Bellevue Hospital Medical College, New York; Visiting Physician to Bellevue Hospital, etc. With Three Hundred and Sixteen Figures in the Text, and Two Plates. Fourth Edition, entirely rewritten. New York: D. Appleton and Company, 1888. Pp. xvii-1 to 872. [Price, \$6.]

Miscellany.

The Fifth Annual Meeting of the New York State Medical Association will be held at the Hotel Brunswick, New York city, October 9, 10, and 11, 1888.

There will be a morning session at 9 o'clock, an afternoon session at 1 o'clock, and an evening session at 7.30 o'clock each day.

At the first session papers will be presented by Dr. Oliver P. Hubbard, on "A Case of Anæsthesia by the Inhalation of Nitrous Oxide, supposed to be the First on Record"; by Dr. George E. Fell, on

"Forced Respiration: History, Apparatus, Report of Six (or more) Cases, Effects of, on Narcotized Human Subjects, Adaptability of, in Cases of Drowning or Shock"; by Dr. William D. Garlock, on "The Origin and Medical Treatment of Uric-acid Calculi of the Kidney"; by Dr. Charles W. Brown, on "Railway Injuries."

At the afternoon session on the first day the discussion will be upon nosography. It will be opened by Dr. Alfred L. Carroll with a paper on "What general principles should govern classification and nomenclature, irrespective of their particularization in medicine?" This will be discussed by Dr. M. L. Britton and Dr. Simeon T. Clark. Question 2. "What are the advantages of a nosographical system based upon anatomy?" Discussion by Dr. Edward G. Janeway and Dr. Frank W. Ross. Question 3. "Does a nosography based upon anatomy afford satisfactory means for the registration of clinical phenomena?" Discussion by Dr. E. D. Ferguson, Dr. H. D. Didama, and Dr. Charles G. Stockton. Question 4. "What place in nosography should be assigned to bacteria, ptomaines, leucomaines, and 'extractives,' respectively: [a] From a bio-chemical, [b] from a clinical point of view?" Discussion by Dr. Elwyn Waller, Dr. Charles A. Doremus, and Dr. Nelson B. de Sizer.

At the night session on the first day the following papers will be read: "Hiccough, with Notes on Treatment," by Dr. Frederick W. Putnam; "Diphtheritic Paralysis," "The Treatment of Diphtheria," by Dr. J. Lewis Smith; "A Case of Supposed Partial Twist of the Intestines," by Dr. George E. McDonald; "A New Treatment of Pneumonia," by Dr. Godfrey R. Martine; "Rheumatoid Arthritis," by Dr. E. J. Chapin Minard; "The Use and Abuse of the Forceps in Obstetrics," by Dr. John P. Garrish.

On the second day in the morning Dr. William H. Carmalt will deliver the Address on Surgery. This will be followed by papers on "Ocular Palsies," by Dr. Alvin A. Hubbell; "Heredity in Certain Classes of Cases of Chronic Diffuse Nephritis," by Dr. B. A. Church.

At the afternoon session there will be a discussion and general consideration of tumors from a surgical point of view, opened by Dr. John W. S. Gouley. The questions to be discussed are: 1. "What are neoplasms, and what are the characters which differentiate them from blastomata, and these from inflammatory processes?" 2. "What are the advantages of naming and arranging the neoplasms in accordance with their histogenesis?" 3. "What is the value of the anatomical basis to the clinician when the question of malignancy arises?" 4. "What are the objections to the grouping of neoplasms in accordance with benignity and malignancy?" These questions will be discussed by Dr. Hermann N. Biggs. Question 5. "What constitutes malignancy, histologically and clinically?" 6. "What is the mechanism of the necrotic process which so often occurs in certain neoplasms?" These questions will be discussed by Dr. Charles B. Nancrede and by Dr. Nathan Jacobson. Question 7. "What is the *rationale* of the recurrence of excised neoplasms in distant parts or in the viscera?" 8. "What is the explanation of the tendency in certain neoplasms to involve secondarily neighboring lymphatic ganglia?" These questions will be discussed by Dr. Joseph D. Bryant, Dr. Uri C. Lynde, and Dr. Leroy J. Brooks. Question 9. "What therapeutic deductions are to be drawn from the analysis of the genesis and history of a given neoplasm?" 10. "What are the indications and contra-indications of the excision of neoplasms?" These questions will be discussed by Dr. Frederic S. Dennis, who will also discuss Question 13. Question 11. "What is the average duration of life from the time of the appearance of a malignant neoplasm which has not been treated?" 12. "To what extent does the excision of malignant neoplasms prolong life?" These will be discussed by Dr. William T. Bull, Dr. Charles W. Browne, and Dr. E. M. Moore, all of whom will discuss No. 13. Question 13. "Are malignant neoplasms ever cured?" This will be discussed by Dr. Charles T. Parkes, Dr. William H. Carmalt, Dr. Stephen Smith, and Dr. William S. Tremaine, who will also discuss Questions 10 and 12.

At the night session on the second day the discussion on tumors will be continued.

At the morning session on the third day the address on medicine, entitled "Medical New York in 1800," will be delivered by Dr. John Shrady. The papers will be: "Mechanism of Posthumous or Post-

mortem Inversion of the Uterus," by Dr. Isaac E. Taylor; Address on Obstetrics, by Dr. George Tucker Harrison.

On the afternoon of the third day the discussion will be on puerperal septicæmia, and will be opened by Dr. Carlton C. Frederick with the following questions: 1. "What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of micro-organisms?" Discussion by Dr. Hermann M. Biggs. 2. "Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What ætiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotics modified by implantation upon the puerperal state?" These questions will be discussed by Dr. Everard D. Ferguson and Dr. S. B. Wylie McLeod. Question 3. "What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as ætiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions or complications, that may be relied upon as prophylactic to puerperal septicæmia?" These questions will be discussed by Dr. Frank W. Ross and Dr. John Shrady. 4. "Are the lesions resulting from puerperal infection always the same? If various lesions result, can an accurate differential diagnosis be made between them, based alone upon the history and symptoms?" This will be discussed by Dr. William H. Robb. 5. "What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease, tend to render it fatal?" Discussion by Dr. Frank Grauer. 6. "What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal and when intra-uterine? When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal, and dietetic treatment is to be used in addition to the local antiseptic measures? To what extent should alcoholic stimulants and antipyretics be used?" Discussion by Dr. William T. Lusk and Dr. Rollin L. Banta. 7. "What sequelæ of puerperal septicæmia tend to impair the subsequent health of the woman in case of her recovery? To what extent do chronic diseases of the pelvic organs owe their origin to puerperal septicæmia?" Discussion by Dr. John G. Orton.

At the night session on the third day the discussion on puerperal septicæmia will be continued.

The Catskill Mountains as a Health Resort.—It would seem, from certain indications of the past summer, that the pre-eminence which the Adirondacks have so long enjoyed in this part of the country as a resort for invalids is at least to be contested by the Catskills. Individual capital and enterprise have laid open the heart of the Catskills to New Yorkers, so that an invalid can leave the city in a parlor-car and reach an altitude of twenty-five hundred feet in five hours without change. Business men have not been slow to take advantage of this condition and to prepare the way for the crowds of visitors who are availing themselves of these facilities.

In climatic advantage there seems little choice between the two regions. The altitude is about the same, and, with the exception of the lakes, the country is the same. Should it be proved that the air is equally good for invalids—and of this there seems to be no doubt—then the newer resort will have greatly the advantage, for the ability to reach it from New York by a five-hour ride in a parlor-car is an advantage which the Adirondacks will never overcome.

It seems strange that this nearest considerable altitude to such great cities as New York and Philadelphia should so long have remained practically unknown to the seekers after health and rest. We do not refer to the old Mountain House or the newer Kaaterskill—immense white caravansaries filled with the noise and bustle of a summer hotel—but to the quiet, little-visited regions in the heart of the mountains, back an easy driving distance from the Hudson; regions where the bear and fox are so plentiful that a beautiful little inn, built for the Onteora

Club, has been named from them "The Bear and Fox." Here the highest temperature recorded during the past summer was 86°, and that only for a few hours one morning. On the warmest days the man who leaves his newspaper on his piazza has to look for it where the breeze may have deposited it; and, as the evening comes on, he seeks the cheerful warmth of the log fire.

Whatever comfort the sick or the overworked can derive from a high mountain region, plenty of game, pure spring water, no sewers, absolute quiet, a table equal to Delmonico's, beautiful drives, unsurpassed views, and immediate communication by rail and telegraph with two great cities, is now to be had in this region. We predict its rapid development.

Milk Inspection in New York City.—"The Medical and Surgical Reporter" for September 8, 1888, contains the following well-deserved compliment to one of the members of the Board of Health:

"There is one thing which they seem to do pretty well in New York—namely, the inspection of the milk supply. This is due not so much to good laws as to the fact that they are executed by a most efficient and zealous public officer, Dr. R. H. Nevins, who carries out the duties of his office in a way which indicates his appreciation of its importance. One of the measures he adopts to make his inspections fulfill their object is to make sudden and unannounced descents upon milk-dealers at the railway stations through which most of the milk supply of New York passes, and then to have the milk in their cans subjected to certain immediate tests by a number of his assistants, and to pour into the gutter the contents of any cans of milk which are below an appointed standard of purity. By this means he reaches more dealers than he can touch, for the fear of an unexpected test must keep many honest who would swerve from the right path if the inspections were made in any other way."

The "Reporter" goes on to say that, valuable as these tests may be, the inspection of the milk dealt from wagons and so-called milk depots in the poorest parts of large cities would be much more valuable; and that a tour of inspection among the retailers of milk to the poor would do more to correct the horrible cheating which goes on in this article of food than all the investigations conducted at railway stations. This is a very good suggestion—the only fault with it being that it is exactly the system followed by the New York Board of Health in every part of the city, rich or poor. But the poor woman in the slums, when her milk is tested and thrown out, complains bitterly that she sells merely as she buys from the country producer; and it is to reach the fountain-head that the milk is examined as delivered at the railroad depots.

The Health of Kansas City, Mo.—According to the "Weekly Return of Births and Deaths" to the Health Department for the two weeks ending Saturday, September 22d, there were 67 deaths, including 2 from cholera infantum, 1 from cholera morbus, 2 from diarrhoea, 1 from diphtheria, 3 from malarial fever, 2 from remittent fever, 1 from scarlet fever, 4 from typhoid fever, 2 from typho malarial fever, 1 from whooping-cough, and 2 from meningitis.

THERAPEUTICAL NOTES.

Lactic Acid in the Treatment of Tubercular Diarrhoea.—MM. Sézary and Aune have reported ("Lyon méd.," No. 35, 1888) some noteworthy results with lactic acid in the treatment of diarrhoea in tubercular patients. The action of the acid in local manifestations of tuberculosis has already been noted many times. Laryngologists have for many years been curing tubercular ulcerations of the larynx with concentrated solutions; and recently Blanc, chief of clinic of Leon Tripier, has observed the remarkable effects produced by it in tubercular ulcers of the tongue, when used in concentrated solutions. Struck by these facts, the authors decided to try and discover whether it might not be the long-sought-for specific for tubercular ulceration of the intestine—the parasiticide of the bacillus of Koch. The lactic acid was administered as follows: Commencing with a dose of 2 grammes in a solution of 120 grammes, if that was found to be insufficient it was rapidly increased to 6 or 8 grammes, taken in teaspoonful doses during the twenty-four hours. With this dose the patients complained often of gastric disturbance and setting of the teeth on edge, which dis-

appeared by adding one gramme of chlorodyne to the solution. After the second day the passages diminished in frequency, and they became normal about the fourth day, and remained so. Nine very successful cases are reported.

Chlorophyll.—According to the "Lancet," "Pringsheim asserts that the green coloring matter of plants is not the agent which breaks up carbonic acid and eliminates oxygen, chlorophyll being but a screen to protect the living protoplasm from the powerful action of the sun. In certain conditions, he maintains, the cells can give off oxygen in the dark, and even colorless cells can do this. He has studied the movements of the protoplasm in green cells placed in various gaseous media without oxygen. Even a short exposure in an oxygenless atmosphere destroys the decomposing power of the cell for carbonic acid. This condition of 'inanition,' as it is called by Pringsheim, disappears when oxygen is readmitted, but not if the cell has been 'asphyxiated' by too long deprivation of oxygen. He avers that no evidence of the presence of free oxygen in the vegetal tissues has ever been adduced, and he believes that the breaking up of carbonic acid results in the making up of a compound body from which oxygen is evolved as it is discharged from the cell by osmosis."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE CURABILITY OF URETHRAL STRICTURE
BY ELECTRICITY.

AN INVESTIGATION.*

By E. L. KEYES, M. D.

A WIDE-SPREAD belief exists in the community, lay as well as medical, that material progress has been made of late years in the use of electricity as applied to the cure of urethral stricture. This belief includes the three presumptions: (1) That any one, by following rules, may use the method successfully; (2) that electricity does no harm to the urethra; (3) that stricture cured by electricity is dissipated by absorption, and the urethra remains permanently open.

In the autumn of 1887 a gentleman with stricture came to me from South America for treatment by electricity. His surgeons at home had failed to cure him by dilatation; he declined cutting there, and came to New York, where, he had learned at home, strictures are permanently cured by electricity. Not having commenced my experiments at that date, and not wishing to trifle with a private patient, I declined to accept his case, and he sought other advice.

Shortly afterward a physician of New York in excellent standing wrote that he had a relative whom he wished to place in my hands for urethral treatment by means of electrolysis. I also declined to receive this case. Subsequently another gentleman, under my care for a neurotic condition of the urethra, left me with my consent, and was treated by his family physician electrolytically for an alleged stricture, which the physician promised to cure, assuring him that it was the cause of all his trouble. Not getting well under this physician's care, he consulted Dr. Robert Newman as an authority upon urethral electrolysis, who assured him he had no stricture, but still proposed to remove his urethral symptoms by electricity. The patient returned to me unrelieved, declining further trial of electricity.

In these and many other ways it has come to my knowledge that confidence in the value of electricity for the treatment of stricture has of late been rapidly growing throughout the land; therefore I determined to investigate the matter, and I turned to Dr. Robert Newman, of New York city, who is the apostle of this creed, and who alleges that he has radically cured two hundred cases (or thereabouts) of stricture by its use, and asked him for instruction and his co-operation in my investigation of the subject, which I assured him was honest, stating that, if my results justified his assertions, I would advocate the method, and advise its use generally for the benefit of strictured mankind.

Dr. Newman kindly accepted the proposition, sent me his pamphlets, assured me that following his rules would convince me of their truth, and accepted from me a dispensary patient to treat that I might personally verify the re-

sult attained by himself. I therefore procured from various dispensaries seven pronounced typical cases of urethral stricture; three of these I treated personally, with all the ability I possessed, commencing in January, 1888, following Dr. Newman's rules as closely as I was able.

Three patients I turned over to my assistant, Dr. E. Fuller, who treated them independently, fortified with extra knowledge gained by personal observation of Dr. Newman's operative method as practiced by himself (one case of urethral spasm was also treated by Dr. Fuller). The seventh case was sent to Dr. Newman, who received the patient kindly, and treated him about once a week from February 6th until June 27th—nearly five months. My assistant, Dr. Fuller (once Dr. Garrison), always accompanied this patient on his visits to Dr. Newman, and immediately upon leaving him wrote down in a case-book what had happened during the interview.

One other case previously treated came to me, and out of this material I propose to construct my report.

Having entered the investigation without bias and in the hope of learning something, I make my report without fear of being misjudged, and from no motive except that of attempting to throw light upon a subject which is usually shrouded in much mystery.

To prepare properly for my work, I purchased the insulated urethral conductors of Newman, employed an admirably constant battery of A. Gaiffe (Paris), one having a milliampèremeter in the circuit, so that the amount of current used was constantly recorded under the eye of the operator. Dr. Fuller used the same battery upon his patients. In order to assure myself that the milliampèremeter in the circuit of the Gaiffe battery was accurate, I procured a Barrett milliampèremeter, so as to test the foreign gauge with one of the best of native make; they were both joined on the same circuit, and accorded absolutely for all the lower measures of quantity, and for any combination of sets of cells in the battery. There was a moderate variation in the marking of the instruments between the points of 25 and 50 milliampères; but, as all my experiments were conducted at 5 milliampères and below, I must conclude that the battery was a proper one and its action satisfactory, more especially as the cells were small, ten being required to give five milliampères, so that gradations of smaller quantities of electricity became easy.

Before detailing my cases I wish to remark that Dr. Newman is largely responsible in this country for the modern electrolytic fervor as relating to urethral matters, since his statements of results have been the most pretentious. I will therefore call attention to some of Dr. Newman's rules and assertions, that it may be seen how nearly my results correspond to his statements.

Other literature upon the subject I shall mainly disregard, to escape needless repetition. The whole subject, from a literary standpoint, has very recently been discussed in an admirable manner by Dr. F. Tilden Brown, of New York.* To those interested in this branch of the subject

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

* "An Essay read before the Surgical Section of the New York Academy of Medicine upon the Limitations of Electrolysis as a Thera-

I commend a perusal of Dr. Brown's paper. He has digested the literary material and found it wanting in that concordance of fundamental sentiment (as to operative method, appropriate cases, and result) which might be expected from the advocates of a new system, if that system had a solid basis upon which to repose.

Indeed, I feel I can do no better, to sum up his conclusions, than to quote from his paper where he says: "I feel an apology is due for presenting before this section of the Academy a paper upon a theme with the status of which it has long been so well satisfied. If, before testing it in practice, I had reviewed the literature of the subject as carefully as since, I should have seen that no further evidence was needed to assure the incredulous of its narrow scope, and equally well have recognized the futility of hoping to convince its advocates of any self-deception in the matter."

Dr. Brown gives his own personal results and condemns the method in so far as the alleged effect of permanently removing organic stricture is concerned, while he allows to electricity a certain effectiveness in removing spasm, an effect which Newman, in a letter to me, denies that it possesses in any degree.

In December, 1871, I published the result of my attempt to cure ten patients of urethral stricture by electrolysis applied according to the only method then existing—that of Mallez and Tripier. The merits of this method had been set forth most glowingly and with the same insistence and assurance of success that we now find made use of by Dr. Newman and those who employ his method.

My ten cases turned out badly. Most of the patients bolted the hospital, being unwilling to endure the treatment, which was very painful; none were long under observation; several remained in hospital,* but absolutely refused to continue the electricity, preferring "cutting" or other methods.

The most pungent criticism I can make upon this my first effort to cure urethral stricture by the use of electricity is to relate the following incident:

On a certain day, less than a year after terminating my experiments at the Charity Hospital, I accidentally encountered a man, evidently in great distress, near Bellevue Hospital, toward which institution his course was directed. He was leaning against a post in the street, making serious efforts in the vain endeavor to pass his urine. I was moved by natural sympathy, and, approaching him, pleasantly asked him what his trouble was, and whether I could be of assistance to him. He looked up and replied: "Don't you know me, Dr. Keyes?" "No," I said; "who are you?" "I am one of the men," he replied, "whom you cured of stricture at Charity Hospital, and I can not pass my water."

The Mallez and Tripier method of using strong currents and cauterizing the stricture with the negative pole, so that a circular slough comes away, is no longer used and is justly condemned. I indeed have been criticised for employing

it; and Dr. Newman has plainly stated that I misjudged the value of electricity in the urethra, because I employed electro-cautery and not electrolysis—a strong current instead of a weak one. I have accepted the criticism, being only justified by the assertions of Mallez and Tripier, which I was testing.

My present personal investigation covers the modern method—namely, that advocated by Dr. Newman, who alleges such phenomenal success by it in the permanent cure of organic stricture.

As to just where electro-cautery ceases and electrolysis begins in the urethra of man when the electrical current is used, I can not say. Ström,* of Christiania, found by experiment that stricture (after three or four weeks) could be produced in the urethra of the rabbit by the use of from two to eight elements, and sittings of from five to ten minutes. The amount of current in milliampères is, unfortunately, not given.

Dr. Robert Newman may be cited as to four of his published articles—two being sets of one hundred successful cases each, one a defense of the merits of the method, and one rules for its safe and efficient performance.

In August, 1885,† the first table of one hundred cases of permanent cure appeared. It is maintained that all became and remained permanently well, the cure being proved by examination in attestation of the fact at varying periods—the shortest, three and a half years after the alleged cure, the longest, eleven years—without intervening treatment and without relapse.

The duration of the malady before treatment is stated to have varied from one to twenty-five years. The stricture was single or multiple, situated at points varying from close to the meatus up to nine inches. The average number of sittings required to effect a cure was about *five or six*, and *two or three months* about the average time.

In no instance was the urethra brought up to a size larger than 28 (F.); most of the patients were discharged cured taking about 22 (F.).

Newman's‡ second tabulated one hundred cases of radical cures were published in September, 1887. The term "cured" is omitted in this list; many patients are reported as not heard from in verification of their having retained the dilatation reached during treatment; others were still under treatment; some are reported "well" at intervals varying up to five years. The strictures had existed before treatment from one month to thirty years. The average number of sittings was *five or six*, the time required for treatment about *two to three months*.

Traumatic strictures and the result of recontraction after previous internal urethrotomy appear among the cases treated, and the patients are reported as being well for the time specified without relapse. I quote a few of the statements made:

"Electrolysis is applicable to all strictures in any part of the urethra."

"Electrolysis will pass and enlarge any stricture when

peutic Agent in Organic and Spasmodic Stricture of the Urethra, with Cases," "Journal of Cutaneous and Genito-urinary Diseases," July, 1888.

* "Practical Electro-therapeutics . . . Electrolytic Treatment of Stricture," etc., "N. Y. Medical Journal," December, 1871, p. 569.

* "Internat. Ctrbl.," 1887.

† "New England Medical Monthly."

‡ "Journal of the American Medical Association."

other instruments or the skill of surgeons fail, which I have often demonstrated."

"It relieves at once—no relapse takes place."

In his defense of the method, Newman* alleges as causes of failure—

1. Incompetence of the operator.
2. Mismanagement.
3. A mistaken diagnosis.

He cites cases, accuses those who have used a strong instead of a weak current, advocates a special electrode, great gentleness, weak currents, long intervals between the sittings, etc., and concludes by stating that "electrolysis can not fail, but operators may and do."

Finally, in his article giving the method in detail,† and referring to a long list of contributions from others upon the general subject, he gives twenty rules for the management of cases, which I need not repeat here, including specifications as to the battery, the galvanometer, the employment only of the negative pole, the use of his egg-shaped bulb electrode, and how to turn the current on and off. In another paper ("Jour. of the Am. Med. Assoc.," Sept. 24, p. 390) he says, speaking of his last one hundred cases: "Each séance lasted from two to ten minutes. I do not like to prolong it more, except for good reasons."

He advocates the avoidance of pain, advises that the patient be in the erect position, condemns the use of two electrodes in succession at one sitting, denounces the use of force or the employment of the treatment when the urethra is even subacutely inflamed, objects to anæsthetics, and states again: "All strictures are amenable to the treatment by electrolysis." He adds that the patients may keep about, that the method relieves at once and is devoid of pain, danger, or inconvenience, and not followed by hæmorrhage, fever, or other unpleasant consequences, and that no relapse takes place.

I wish to state here that all my relations with Dr. Newman have been most amicable; he has been particularly courteous in supplying me with his pamphlets, and instructing my assistant, Dr. Fuller, in furthering my study of the subject; and that I, on my part, entered into the investigation in the hope of demonstrating that the method did possess value, and to decide how much.

In the following cases I have observed the rules laid down as nearly as possible, always using the negative pole of Newman's electrode, lubricated with glycerin, and employing mild currents; deviating from the rules somewhat occasionally, but not so much, it will be observed upon close reading, as Dr. Newman himself deviated in the case he kindly consented to treat for me in the presence of my assistant, Dr. Fuller.

It is necessary in a question of this kind to be rather full in the history of the cases; therefore I give them more at length than might otherwise seem necessary. The case of J. D. (VIII), treated by Dr. Newman for me, is condensed from the note-book, the notes being written up by Dr. Fuller immediately after each sitting.

Other physicians have tested the treatment in a few cases and furnished me with their unpublished conclusions. I can not, however, reproduce them here, nor any of them, unless I brought in all; my excuse is that this investigation is a personal and not a statistical one, and I must of necessity confine my conclusions to the results of cases which have passed under my own eye and those subject to my personal direction.

CASE I—*January 27, 1888.*—A. M., aged seventy-four, a man in the possession, apparently, of full and vigorous health in spite of his years, passes acid urine, somewhat turbid with pus, every two hours in a small stream, with straining. Thirty-five years ago Dr. Van Buren treated him for a deep urethral stricture by the use of steel sounds. Since that time no instrument has been used. At five inches I find a tight stricture admitting only a filiform whalebone. At two inches and a half slight contraction, admitting 22 F. bulb.

30th.—Electrode 16 (F.); five milliamperes; three minutes; no effects.

February 3d.—Electrode 16 (F.); five milliamperes; four minutes; no effects.

7th and 14th.—No. 16 (F.); four and five milliamperes; four minutes; no effect.

Much local disturbance followed this last effort, although the deep stricture was not passed and no blood appeared at the moment of operating; pain, however, followed, with fever, blood, excess of pus, and much increased local vesical irritability, confining the patient to bed for a week.

March 2d.—I therefore determined that more electricity and greater length of time were not desirable, but that the stricture must be dilated in any case, and introduced into the bladder easily over a whalebone guide a metallic 9 (F.) steel tunneled sound. As a result, there was little or no local disturbance, pus diminished, the stream became larger, the intervals longer.

9th.—Over a whalebone guide I attempted to pass a No. 12 (F.) electrode, using no force, five milliamperes for five minutes, and failed to pass the stricture; considerable pain was complained of at once. The patient wrote to me twice afterward during a month that great local disturbance followed, confining him to bed with local inflammation and much increase of pain, pus, and irritability. Then he wrote, making an appointment to come up, but failed to appear. Six months later (September 13th) I examined him and found his condition and his stricture practically what they had been at our first interview. Filiform enters with difficulty; No. 9 tunneled engages, but will not pass.

Surely in this case the electricity was not suitable, and, without the employment of force, produced more local disturbance than the use of ordinary dilatation with force had done at a previous sitting.

CASE II—*January 30th.*—L. F., aged thirty-one. Ten years ago, one year after gonorrhœa, Dr. E. A. Banks, at Bellevue Dispensary, passed a No. 18 (F.) steel sound, and told him he had stricture. Gleet continued, but no further instrument was introduced until two or three years ago, when, having a retention of urine, he applied at the Bellevue Dispensary, and Dr. S. Alexander passed sounds, commencing with a small instrument and rapidly working up to 27 (F.). He remained well for a year, except for a continuous gleet, when retention again came on after drinking. He applied to Dr. Creary, at Bellevue, who relieved him with a catheter. Five weeks ago, again having retention after drinking, and applying at Bellevue, he was re-

* "Is Electrolysis a Failure?" "Med. Record," Sept. 25, 1886.

† "The Armamentarium for the Treatment of Urethral Stricture by Electrolysis," "Med. Register," Philadelphia, 1887.

lieved by the passage of sounds Nos. 15, 17, 18, and 20 (F.), and since that time has had no retention, but a little vesical irritability.

The meatus takes 30 (F.) at two inches and a half; a moderate annular stricture admits 23 (F.) at the bulbo-membranous junction; 19 (F.) goes easily through a soft area; a drop of blood follows withdrawal of the instrument. I use 30 (F.) bulb, five milliamperes, four minutes, and fail to pass the stricture at two inches and a half.

February 6th.—Bulb 27 (F.), four milliamperes, four minutes, and fail to pass stricture at two inches and a half; 22 (F.) bulb, four milliamperes, four minutes, passes easily.

13th.—No. 25 (F.) bulb, used carefully as a test, will not pass. I use 22 (F.) bulb, therefore, with three milliamperes, for five minutes. It passes, but with more difficulty than a week ago; this is upon the two-and-a-half-inch stricture.

20th.—Slight irritation followed, but the gleet is decidedly better; 22 bulb to-day will not pass. I use, therefore, 16 (F.) bulb, three milliamperes, six minutes, and pass the two-and-a-half-inch stricture without pain, bringing no blood. This 16 bulb passes the deep stricture also easily without electricity.

27th.—No. 18 bulb passes anterior stricture. I use 16 bulb again, five milliamperes, ten minutes, and enter the bladder again easily, this time with the current on.

March 5th.—No. 20 bulb, five milliamperes, five minutes, passes two-and-a-half-inch stricture with a little effort; 17 bulb, five milliamperes, half a minute, passes deep stricture.

19th.—No. 22 bulb, five milliamperes, five minutes, passes anterior stricture; 20 bulb, five milliamperes, four minutes, passes deep stricture.

April 2d.—No. 25 bulb, five milliamperes, ten minutes, will not pass anterior stricture; 22 bulb, five milliamperes, passes and also enters bladder.

23d.—I test stricture to-day at two inches and a half; 23 bulb will not go; 19 goes without electricity, then 21, and then with some effort 23. I then use 25 bulb, five milliamperes, twenty-five minutes, holding it firmly against the anterior stricture. It will not pass, so that in this case, after more than two months' persistent treatment, the stricture is absolutely at the same size as when I commenced, 23 (F.). The deep urethral congested area, being soft and yielding to dilatation, has advanced three sizes French.

September 13th.—Re-examined; 18 bulb will not pass two-and-a-half-inch stricture; 15 goes, and then with force I pass the 18 bulb; 18 blunt steel sound then enters, but will not pass deep stricture.

CASE III—February 4th.—F. S., aged thirty-three, complains of frequent urination in a small stream, due to stricture following a gonorrhœa acquired eight years ago; not previously treated; 14 (F.) bulb detects double linear stricture at two and three inches; 12 soft bougie easily enters bladder. I use 16 (F.) bulb, five milliamperes, four minutes; it will not pass.

8th.—No. 16 (F.) bulb, four milliamperes, one minute, will not pass anterior strictures; 10 (F.) bulb, four milliamperes, held in the strictured area four minutes, brings trace of blood. I do not attempt to pass the deep urethra.

15th.—Patient reports the stream smaller, and that he is worse; this is doubtless because I did not pass the deep urethra at the last visit. I therefore now pass 12 (F.) soft bougie into the bladder, and use 12 (F.) bulb, three milliamperes, ten minutes, in the anterior strictures; no blood.

23d.—Mistaking the number, I try with some force to pass 21 (F.) soft (instead of 12); it will not go, but dilates the stricture, so that 16 (F.) bulb enters anterior strictures and allows me to use four milliamperes for six minutes, with a trace of blood.

28th.—Retention of urine for twenty-four hours after last sitting; 16 bulb goes with more difficulty than last time, but with it I use five milliamperes for ten minutes.

March 7th.—No. 17 bulb goes with a little difficulty, bringing some blood, under the use of five milliamperes for eight minutes.

16th.—No. 20 (F.) bulb, five milliamperes, ten minutes, will not pass.

22d.—To-day, in despair of help from electricity, I use an ordinary conical steel sound, 21 (F.); it goes, bringing a faint trace of blood; I follow it with 20 bulb, using five milliamperes for five minutes.

In this case, therefore, retention of urine was produced by the treatment, which was finally abandoned, and ordinary dilatation substituted for it.

CASE IV—February 16th.*—J. H., thirty-five, complains of difficulty in urination, and having had retention three times during the past eighteen months, gonorrhœa seven and two years ago; treatment by sounds at New York and Chambers Street Hospitals; stricture at bulbo-membranous junction. Filiform whalebone enters bladder, and over it a 19 (F.) tunneled steel sound; the stricture is of the soft variety, a congested surface with underlying spasm.

24th.—Relief followed the sound, and no disturbance. To-day, 12 (F.) tunneled electrode, five milliamperes, two minutes, passes the stricture; electricity continued in all six minutes.

March 2d.—A chill and fever followed the electrical treatment, causing the patient to lie up for three days; 17 (F.) tunneled electrode, five milliamperes, passes stricture in three minutes. The current was kept in the stricture for nine minutes longer.

9th.—Twenty-four hours after last sitting chill, fever, and vesical tenesmus laid the patient up for two days. Stream is now better than formerly; 20 (F.) tunneled bulb, four milliamperes, fifteen minutes, enters bladder; current continued two minutes longer.

April 6th.—No trouble after last sitting. Blunt 16 (F.) sound enters bladder without electricity; 20 (F.) bulb will not go; 22 (F.) bulb, five milliamperes, enters bladder in eight minutes.

13th.—Only trace of blood follows. Retention occurred during the week, but now stream is again satisfactory; 22 (F.) bulb, five milliamperes, ten minutes, will not pass.

20th.—Great complaint of pain and trouble in urinating during the entire week; worse than before the use of the electricity, which he strenuously objects to. Electricity abandoned; gradual dilatation with conical steel sounds by old method up to 26 (F.).

27th.—No trouble followed last sitting; steel sounds used easily up to 32 (F.).

In this case urethral fever, laying the patient up in bed, was produced by the electricity, retention of urine and great pain and distress; so that the treatment was abandoned, and ordinary dilatation substituted.

CASE V—March 27th.—M. C., aged thirty-two, complains of stricture following gonorrhœa, and has retention at the time of application. No instruments have been ever used, except a sound in exploration just before his visit; at two inches and a half, triple linear stricture, admitting 19 (F.) blunt steel sound, which enters the bladder.

30th.—The patient for a time since the exploration has

* Cases IV, V, VI, and VII treated for me by Dr. E. Fuller.

had to use a 16 (F.) catheter in order to urinate. Soothing means were employed in the usual way, and a few deep urethral injections, until the catheter was discontinued and urination comfortably performed, the patient being apparently well.

April 6th.—No. 17 (F.) bulb, three and four milliamperes, eight minutes, passes into bladder; tingling pain complained of.

13th.—Retention followed electricity, and two days later perineal swelling and great local tenderness, making it difficult to walk. Brawny perineal induration remains. No electricity to-day.

20th.—Better, but lump in the perinæum persists, although subsiding.

In this case the electricity nearly produced perineal abscess, and was abandoned.

CASE VI—*April 2d.*—W. W., forty, complains of difficult urination in small quantities, following numerous attacks of gonorrhœa; never had retention, and no instrument has ever been passed. Meatus takes 20 (F.), which just detects a tightness at two inches and a half; 13 (F.) is arrested at the bulbo-membranous junction. Filiform whalebone enters bladder easily; over it a No. 11 (F.), tunneled electrode, 4 milliamperes, enters the bladder easily, without resistance, in one minute; trace of blood; no pain.

9th.—Meatus forcibly dilated to 22 (F.); 22 (F.) electrode, four milliamperes, one minute and a half, enters bladder easily; trace of blood; electricity continued in all two minutes.

17th.—Stream smaller again, and some vesical irritability complained of. No electricity to-day.

23d.—Meatus dilated to 26 (F.); 26 (F.) electrode, five milliamperes, ten minutes. It was resisted for eight minutes, and then passed.

May 6th.—Some discharge from the urethra since the last application; 22 (F.), is the largest bulb that will pass the two-and-a-half-inch stricture.

No attempt was made to test the size of the deeper stricture, and no electricity used. The patient now ceased to attend, and could not be found for a time, but he continued taking an alkaline medicine, which comforted him.

28th.—A blunt steel sound, 22 (F.), enters the bladder; the stream is larger than formerly, and there is less difficulty in urinating, but otherwise all symptoms remain as they were when patient applied for treatment—namely, precipitous urination of a fluid full of deep urethral shreds, pain at the head of the penis, and imperfect erection. In other words, the element spasm is better for the dilatation, and the addition of electricity to the dilatation did no harm.

Manifestly there never was any deep urethral fibrous stricture in this case, or a jump from an 11 electrode (passed in one minute with four milliamperes) to a 22 electrode, which would pass in one minute and a half with four milliamperes one week later, would have been impossible. I say "impossible" advisedly, referring to my experience in other cases with the method.

Clearly this is the kind of case that deceives the unwary and those who wish to be convinced. The type of case is not very unusual. A man has several attacks of gonorrhœa; then he begins to urinate in a smaller stream. He has no gleet, but his urine is full of angular, thickish clumps of pus from the deep urethra; he often has pain in the penis and imperfect erection, and his urination is liable to trouble him by the precipitant urgency of the call.

Examined with the bulb, the orifice, as usual, is a little small, and at two inches and a half is the habitual point of

physiological narrowing. The steel sound hesitates at the bulbo-membranous junction; perhaps it will not enter at all, even in competent hands.

Such a case is often called one of deep urethral muscular spasm, due to anterior stricture of large caliber. It gets well by cutting the anterior strictures if—and, in my opinion, only if—the deep urethra is also dilated.

It gets well under ordinary dilatation. It remains permanently well in either case if, and only if, by the dilatation, by subsequent deep urethral injections, by deep urethral irrigation, or by soothing internal medicine, the catarrhal surface yielding the shreds of pus is much bettered or cured.

It often gets well without electricity, without cutting anteriorly, without dilatation of the deep urethra, under the use of deep urethral instillations of the nitrate of silver carefully applied. But dilatation always improves the facility of urination in these cases, while failing to dissipate the shreds of pus and the other symptoms, and electricity added to the dilatation manifestly does no harm, possibly good. I can not now decide this point.

Certain it is that the amount of dilatation effected by the instrument carrying the electricity afforded the patient in this instance a larger stream, and allowed him to urinate with less effort; but to assert that it cured any fibrous stricture of the deep urethra is begging the diagnosis.

September 14th.—Re-examined to-day, this patient's condition is satisfactory. No. 20 bulb passes with moderate effort, the stream remains good, the symptoms of deep urethral inflammation have disappeared, the spasm has not recurred. Whether the electricity helped the dilatation and the alkaline medicine in accomplishing this cure I can not say. If so, it is useful in spasm.

CASE VII—*April 10th.*—M. T., aged thirty-two, has had numerous attacks of gonorrhœa, and has noticed gradual diminution of the size of the urinary stream for the past three years, with sometimes delay for more than an hour in starting the urine. He has passed a No. 8 (F.) soft bougie upon himself from time to time during the past year. At five inches and three quarters there is a stricture admitting No. 8 (F.); over filiform, 12 (F.) electrode, tunneled, five milliamperes, enters the bladder in eleven minutes; the current was passed six minutes longer, a total of seventeen minutes.

13th.—No after-effect of a disagreeable sort from the electricity, but the same difficulty and slowness of urination continues.

20th.—Reports that he can not now use his own instrument; he has had an attack of retention, partly relieved spontaneously; he is frightened, and objects to further use of electricity. Not even a filiform instrument can be made to enter to-day. The patient desires to enter a hospital. No further treatment used, as he is allowed to go to hospital.

The case treated by Dr. Newman:

CASE VIII—*February 4, 1888.*—J. D., aged forty-four, had gonorrhœa sixteen years ago; fifteen years ago, for retention of urine, meatotomy was performed in Bellevue Hospital, with dilatation.* No sounds were used subsequently, and in six or

* This patient stated at first that he had been cut, and it was supposed by Dr. Newman and myself that his stricture had been cut internally. When questioned finally, he affirmed that the cutting was meatotomy.

eight months recontraction manifested itself through frequent and difficult urination, and he was dilated up to 30 (F.). He then omitted the dilatation, and gradual recontraction occurred, but it did not seriously incommode him until two years ago, when for retention he was again dilated at the Demilt Dispensary up to 30 (F.). Ceasing the use of instruments again, recontraction asserted itself, and yesterday he again had retention, and applied at a dispensary. No. 21 (F.) conical steel sound was introduced, and the patient sent to be treated by electrolysis. At four inches and a half from the meatus there is a double linear (fibrous) stricture, which can be detected by No. 15 bulb, although 21 (F.) steel sound passed yesterday.

Dr. Newman kindly consented to cure this patient, although he objected that it was not a perfectly suitable case, since it had once been, as he then supposed, cut internally; however, he attempted its cure with confidence.

6th.—Dr. Newman used 11 bulb, three milliamperes, ten minutes upon a guide, passing it several times back and forth through the stricture. He orders an injection of sulphate of zinc in water (gr. iij— $\frac{3}{4}$ iv) to be used four times daily, and says the case is not typical, since there is a little pus, and a trace of blood follows the instrument; yet he purposes to continue.

15th.—No. 14 (F.) bulb, tunneled, four milliamperes. Some force is required to get the instrument through; then the current is used, the instrument being passed back and forth through the stricture for ten minutes.

22d.—No. 17 (F.) bulb, five milliamperes, passes after twelve minutes' pressure. More blood than usual.

March 7th.—Silver tunneled conical catheter, 18 (F.), is passed without appreciable obstruction; this instrument is connected with the battery, and five milliamperes employed.

14th.—No. 21 (F.) bulb, five milliamperes, twenty minutes, will not pass; patient asserts that his stream is smaller.

21st.—Patient still states that his stream is no better. No. 21 (F.) bulb, five milliamperes, seventeen minutes, fails to pass, the patient perspiring profusely; then the same silver tunneled catheter which had been used March 7th was threaded upon a guide connected with the battery, and, after about ten minutes' trial, the attempt to get into the bladder was abandoned, the instrument being grasped very tightly by the stricture. It was withdrawn after almost fifteen minutes, the patient feeling faint. Quinine ordered, and belladonna suppository. Dr. Newman maintains that the reason the instrument will not enter is "spasm."

28th.—Patient states that after the last visit he was very sore for five days, and passed considerable blood.

Dr. Newman admitted that the force used at the last visit had been a mistake, and that he had lost ground thereby. He denied that the spasm was due to the treatment, but stated that it was due, like many other queer things, to the "blizzard"—the storm which had prevailed on March 12th—stating that he had another case acting in the same way from the same cause. No. 20 (F.) bulb, five milliamperes, fifteen minutes, fails to pass, and Dr. Newman admits that now the stricture is tighter than before. He advises two weeks' rest, and will begin again.

April 11th.—Conical metallic tunneled 18 (F.) sound passed on a guide. The milliamperemeter was not used, but the current was turned on until the patient said the instrument felt pretty warm. Considerable force was employed, and in about two minutes the sound entered the bladder; it was allowed to remain about four minutes and then withdrawn, followed by a fair amount of blood.

17th.—Dr. Keyes tested the patient as to his condition to-day. He found that only 12 (F.) would pass easily; the stricture bleeds; the meatus takes 29 (F.).

18th.—Dr. Newman tries 21 (F.) bulb, but, failing to pass, gives it up, using no electricity.

25th.—Dr. Newman injects a solution of cocaine into the deep urethra before introducing the electrode, 21 (F.), bulb; no milliamperemeter is attached, but the current is increased until the patient complains of heat. The bulb will not pass, therefore 18 (F.) conical steel sound, tunneled, is used with the current; some blood escapes.

May 2d.—Patient states that there has been no improvement since commencing electricity.

Dr. Newman tries 21 (F.) bulb, but fails after ten minutes; he then takes a conical instrument on a guide and dilates up to 21 (F.), applying the current through this instrument; he now again introduces 21 (F.) bulb, which enters the bladder. Altogether electricity was applied three times in succession at this sitting; considerable blood followed.

16th.—Dr. Newman uses 23 electrode without guide, five milliamperes, ten minutes. The instrument will not pass, and patient declares that his stream is as small as ever.

23d.—No. 25 electrode, five milliamperes, ten minutes, will not enter the bladder.

25th.—Much blood followed the last operation, and is still flowing to-day. Dr. Keyes tests the stricture and finds it at four inches and a half (full) refusing to admit 14 bulb.

30th.—No. 18 metallic conical sound introduced by Dr. Newman upon a guide with five milliamperes, and deep urethra dilated; then 18 electrode, which now passes the stricture under five milliamperes, ten minutes. Considerable blood appears.

June 6th.—No. 23 electrode, with electricity, without guide, by Dr. Newman (Dr. Garrison being present), fails to pass the stricture, a failure ascribed by Dr. Newman to spasm.

13th.—No. 25 electrode, five milliamperes, fails to pass. This time Dr. Newman ascribes the arrest to the triangular ligament. Much blood.

17th.—No. 27 electrode, five milliamperes, six to eight minutes, will not pass. Dr. Newman states that the obstruction is spasm, that the stricture is cured, and that the spasm will probably soon get well if let alone. He prescribes belladonna and opium suppository.

20th.—Dr. Newman introduces filiform bougie, and over it 17 electrode, five milliamperes; much force used; considerable blood and pain. The instrument finally goes through.

24th.—Considerable blood now after each sitting. Patient getting restless and discouraged. Dr. Newman to-day tries 22 tunneled electrode on guide, five milliamperes, ten minutes, but, failing to pass, withdraws the electrode and substitutes over the guide a 17 tunneled electrode. This he passes through with considerable effort. Much blood.

27th.—No. 25 electrode, five milliamperes, ten minutes, fails to pass.

To-day Dr. Keyes explores. No. 17 bulb encounters stricture at four inches and a half. It passes through, finds no spasm beyond, and enters the bladder. On withdrawal, it is firmly detained behind the stricture at a distance measured, after its removal, of four inches and three quarters. The double linear stricture therefore, after nearly five months' treatment by electrolysis, will take a bulb two sizes (French) larger than at the commencement; its double linear character has disappeared; it is tougher, more fibrous, thicker than ever. Dr. Newman writes Dr. Keyes that the stricture at four inches and a half is cured, but that another stricture at five inches and a quarter is not yet well. This latter is the same stricture, in all certainty, the differences in alleged depth from the meatus being due to the fact that traction is made upon the penis in one instance and not in the other.

September 10th.—To-day, ten weeks and a half after cessation of all treatment, Dr. Keyes examines the patient, who complains that his stream is getting very small, that he urinates frequently and with effort, and sometimes dribbles involuntarily. No. 17 bulb stops at four inches and a half. No instrument will go until size 8 is reached. This passes, is followed by 12. Then a 12 bulb goes through by exercising force, and catches distinctly upon withdrawal. Blood follows. No large instrument will pass. The result, therefore, is a loss of at least three sizes by fibrous recontraction in less than eleven weeks.

Dr. Newman called upon Dr. Keyes early in September in response to an invitation to attend the congress and discuss this paper, and stated that he would not acknowledge the result in this case, whether good or bad, as conclusive evidence for or against the method.

The natural comment upon Dr. Newman's case (VIII) is that relief did not occur at once or at all, that cure was not effected, that blood was brought, pain caused, the electricity not always measured, and that more than one electrode was used at a single sitting. His treatment lasted nearly five months—a time, according to his published statements, ample for effecting a cure.

As for my own several test cases, I may summarize them by saying that in no instance did any more benefit appear from the electricity than could have been obtained by ordinary dilatation; that most positive failure of cure must be reported for all; that pain, local inflammation, putting the patient to bed, and threatened perineal abscess must be

noted as among the complications of treatment; that relapse as to recontraction of the stricture was found in all the cases tested, after a moderate interval, being most marked, however, in the case of the patient treated by Dr. Newman for me. For his sake I regret this fact, since he was most kindly in his efforts to help my study, and I regret that his patient at least did not have a better fate.

I must add one more case observed by myself before I commenced this investigation.

CASE IX.—E. S. E., aged thirty-eight. The patient I now present for your inspection is a lamentable instance of the harm that may be done by the use of electricity in the urethra in careless hands, the current in this case having been undoubtedly used at a strength capable of producing caustic effect.

This patient visited me in August, 1887, stating that, being strictured in the anterior urethra at about two inches and a half, a physician passed 25 (French) sound upon him. Afterward, in Brooklyn, being assured by a homœopath that he could cure him radically, he went to the latter, who, by treatment, so burned the urethra at the strictured (?) point as to inflame the canal, causing it to swell sufficiently to produce retention of urine, and left him permanently worse, with the hard lump which you will now feel as large as a small marble, nearly as hard as bone, and surrounding the urethra at about the middle of the pendulous portion.

The patient then went to Dr. Newman, who treated him with mild currents about twelve times, assuring him he could

Case.	Name.	Age.	Number, size, and quality of strictures.	Symptoms.	Former treatment.	No. of sittings. Sizes of electrodes.	Amount of current and time of employment.	Results during treatment.	Duration of electrical treatment.	Duration of entire observation.	Final result when last tested.	No. days between last application of electricity and final testing of urethra.	Result.
I.	A. M.	74	2½ inches, linear, 22 F., films, 5 ins. filiform.	Frequent urination; small stream; purulent urine.	Dilatation 35 years ago.	5 16 & 12 F.	4 & 5 milliam-pères; 3 and 5 minutes.	Great irritation; failure to pass stricture.	Days 37	Days 228	Recontraction.	Days 188	Failure.
II.	L. F.	31	2½ inches, 23 F., films, 5 inches, 19 soft.	Repeated retention.	Relief by sounds.	9 30 & 19 F.	4 & 5 milliam-pères; 4 and 25 minutes.	Moderate gleet; comfort in urination as after form'r use of sounds	82	225	Recontraction, 5 sizes.	143	"
III.	F. S.	33	2 and 3 ins., double linear films. 14.	Frequent urination; small stream.	Nothing.	8 10 & 20 F.	4 & 5 milliam-pères; 4 and 10 minutes.	Retention from dilatation once.	46	46	Treatment abandoned; dilatation substituted.	Not found later.	"
IV.	J. H.	35	5 inches, 19 F., linear, soft.	Frequent urination and retention.	Sounds.	5 12 & 22 F.	4 & 5 milliam-pères; 3 and 17 minutes.	Retention once, pain often.	48	56	"	"	"
V.	M. C.	32	2½ inches, 19 F., triple linear.	Retention.	Nothing.	1 17 F.	3 & 4 milliam-pères; 8 minutes.	Threatened perineal abscess.	1	24	"	"	"
VI.	W. W.*	40	2½ inches films, 20 F., 5 inches, soft, 13 F.	Frequent urination; small stream.	Nothing.	3 11 & 26 F.	4 & 5 milliam-pères; 1 and 10 minutes.	Vesical irritability and urethral discharge.	21	200	Increase of 9 sizes F.	144	Soft, non-fibrous stricture, with spasm, overcome; cure permanent. Failure.
VII.	M. T.	32	5½ inches, 8 F., linear films.	Partial retention; small hesitating stream.	Soft bougie, No. 8 F.	1 12 F.	5 milliam-pères; 17 minutes.	Retention.	1	11	Treatment abandoned to enter hospital.	Not found later.	"
VIII.	J. D.	44	4½ inches, films double linear, 21 F.	Repeated retention.	Meatotomy, subsequent courses of dilatation	20 11 & 21 F.	3 milliam-pères to an unmeasured quantity; 10 & 20 minutes.	Pain; blood; local distress; stream smaller under treatment.	142	219	Worse by 3 sizes than before tr'tment, or by 9 sizes if sound is accepted as gauge	75	"

* Case of spasm.

Cases IV, V, VI, and VII treated by my assistant, Dr. Fuller.

Case VIII treated for me by Dr. Robert Newman.

help him,* yet producing no favorable effect, either upon the lump or upon the symptoms.

The patient concluded, therefore, that he had had electricity enough, having suffered from retention a number of times during his treatment, and getting under Dr. Newman's rather worse than better. He therefore applied to me, that other means of relief might be instituted.

When I saw him, in August, 1887, he had painful and most pronounced chordee during erection. The lump, still present in his urethra, was insensitive to pressure; the strictured area admitted with difficulty No. 11 (F.).

I cut this man more extensively than any patient I have ever performed internal urethrotomy upon—namely, on August 22, 1887, to 40 (F.) on the roof of the urethra. The penis is not very large, measuring only three inches and a third; but I endeavored to cut through the limit of the morbid tissue. In this I failed, and the subsequent use of instruments did not prevent recontraction. The sounds passed with pain and brought blood, and the stream of urine was not materially increased in size. Therefore, on October 2, 1887, nearly a year ago, I cut him again internally on the floor of the urethra, and, being determined to be through, I cut him to 44 (F.), cutting through the sheath of the urethra—indeed, cutting everything except the skin. Considerable subcutaneous hæmorrhage, and at one time a moderate urinary infiltration, followed; but my object was accomplished, the cicatricial ring was fairly divided, the inflammatory symptoms were easily subdued, and the patient has since grown fat and enjoys the best of health, passing a full stream at proper intervals. The hard lump remains, but is slightly smaller. The patient passes for himself easily, once a week, a No. 34 French bougie. The chordee persists, there is no gleet, and the bladder is not irritable.

To what extent, or whether ever, the cicatricial lump caused by the electricity will be absorbed, I can not say.

In conclusion, I may state that electrolysis with a very mild current—I prefer to put it at less than two milliamperes and a half—does no harm; in fact, does nothing that I can appreciate, and does not interfere with the benefit to be derived from ordinary dilatation. I believe that a strong current is full of danger, both immediately from irritating effect and ultimately from cicatricial effect; and that employment of the negative pole does not prevent this.

My study of the subject and the experience it has brought me, digested with all the impartiality I possess, lead me to state that the allegation that electricity, however employed, is able to remove organic urethral stricture radically, lacks the requirement of demonstration. The confidence of its advocates that it will radically cure organic fibrous stricture is, in my opinion, due either to the combined credulity of the patient and imagination of the surgeon, or to some special but fortuitous act of Providence, upon the co-operation of which, in the case of his own patients, the general practitioner can not with any confidence rely.

1 PARK AVENUE, NEW YORK, September, 1888.

The Second Congress of the German Gynecological Society, which has been held in Halle, has resolved, in consideration of the International Medical Congress to be held in Berlin in 1890, to hold its next congress next year. Freiburg is chosen as the place of meeting.—*Brit. Med. Jour.*

* Dr. Newman informs me that he declined to continue in the treatment of this patient, knowing his not to be a suitable case, and says that he sent him to me.

PERINEAL LITHOTRITY.*

BY REGINALD HARRISON, F. R. C. S.,
SURGEON TO THE LIVERPOOL ROYAL INFIRMARY, AND LECTURER ON
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IN view of the splendid results which have been obtained by Bigelow's operation of litholapaxy in all parts of the world, one naturally feels some hesitation in drawing attention to any other method of removing a stone from the bladder in which crushing forms a part. Let me, however, justify my advocacy of an exceptional proceeding, as applied to exceptional circumstances, by a few preliminary or explanatory observations.

One great advantage lithotomy possesses over lithotritry is that it permits the operator to ascertain the condition of the bladder and prostate, and to satisfy himself, by the use of his finger, that every fragment of stone has been withdrawn. The absence of this process in lithotritry is an important circumstance in explaining why recurrences or relapses should be more frequent after crushing than after cutting operations. In a personal experience of lithotritry which, though not large for statistical purposes, includes considerably over one hundred examples in different males, I infer, not only that the liability to relapses after lithotritry is greater than after cutting operations, but that such recurrences are, as a rule, traceable to some purely mechanical cause which either the operation or the operator fails to meet.

In a paper † by Mr. Donald Day, of Norwich, "On Repeated Lithotomy," he analyzes the cases of recurring stone, at the Norfolk and Norwich Hospital, in 1,024 individuals. He divides these recurrences into four groups, in the order of their frequency, viz.: (a) stones formed quite independently of the previous ones, (b) stones undetected at the first operation, and (c) stones formed on a fragment left behind at former operations; group d includes stones of bladder formation, due to chronic cystitis. Though the figures from which my own conclusions in reference to this point are drawn are insignificant compared with those at Mr. Day's disposal, they tend to support his classification, with this difference, that, as my stone cases have been drawn from an area which, unlike the eastern counties of England, is not favorable for the development of calculus, I should put the spontaneous recurrence of stone, independently of a previous operation or other assignable cause, at the bottom of my list instead of at the top.

Taking the fifty cases of recurring stone in Mr. Day's analysis, twenty of these belong to group a, where the stones appear to have formed independently of the previous ones, thus leaving thirty cases where the recurrences were due to local causes, including undetected stones, stones formed on a fragment left after the previous operation, and cystitis. It will thus be noted that three fifths of the recurrences, or three out of the four groups, were traceable to purely local causes in which the bladder, including its outlet, was involved. Though these figures of Mr. Day's

* Read before the American Association of Genito-urinary Surgeons at the second annual meeting.

† "British Medical Journal," February 13, 1886.

only include lithotomy cases, they will also apply to lithotomy, but with probably a greater force. From the careful examination of evidence of this kind, as well as from clinical observation, it appeared that if the advantages of litholapaxy could be combined with those of lithotomy, so far as the latter proceeding relates to the digital exploration of the bladder, much advantage would follow the adoption of such a procedure in certain cases where a recurrence after lithotripsy might almost with certainty be anticipated, by reason of the existence of structural complications which the operation of crushing did not attempt to cope with. For this purpose perineal litholapaxy seemed to be well suited, inasmuch as it would permit of (1) the digital exploration of the bladder and associated parts, both before and after the removal of the stone, (2) the rapid evacuation of the stone, and (3) the drainage and irrigation of the bladder, should this prove necessary. It appeared that all this could be accomplished by a perineal urethrotomy, without encroaching on the neck of the bladder, so far as the necessary incision was concerned. Such a proceeding is thus referred to by Dr. Gouley, of New York,* who, writing in 1873, says "the name of perineal lithotripsy was given, in 1862, by Professor Dolbeau, of Paris, to an operation completed in one sitting, by which the membranous portion of the urethra is opened, the prostate and neck of the bladder dilated, instead of being cut, and a large stone crushed, and the fragments immediately extracted."

I have now had occasion to perform this operation in a somewhat modified form, presently to be described, in four cases of stone in the bladder; in three of these the prostate was large, and I was desirous of draining the bladder after the stone had been removed; in two of these instances litholapaxy had been previously performed; in my fourth and last case the stone was very large. The following are the particulars:

A young man, aged eighteen years, was under my care in the Liverpool Royal Infirmary during the past summer. He was suffering from a large phosphatic stone in the bladder, which it was thought could be removed by litholapaxy. The patient being placed under ether, I found it impossible to grasp the stone with the lithotrite in such a way as to enable me to crush it, for, though I could seize it easily enough, the blades could not be approximated sufficiently to permit of my locking the instrument. I therefore proceeded with a perineal lithotomy, making my superficial incision as for lateral lithotomy. I opened the membranous urethra, and readily passed my finger on into the bladder, as for ordinary exploration. Finding the calculus to be fully as large as anticipated, a strong forceps was introduced into the bladder, with which the stone was crushed and extracted. When the finger showed the bladder to be free, the latter was well washed out with a perchloride solution, and then a large drainage-tube was inserted. The tube was kept in for four days, and then withdrawn; the patient was well and up on the eleventh day, passing all his urine by the urethra. Though the stone weighed about three ounces, it was broken up and evacuated in something under five minutes. In the three other cases referred to a similar proceeding was practiced. In one of these the stone was uric acid, the remaining two being phosphatic. In two the ordinary median boutonnière operation

was practiced, while in the third a preliminary lateral incision was made, as in the case narrated in detail.

So far as dilating the neck of the bladder was concerned, I have been able to accomplish this with my finger, aided sometimes by Wheelhouse's small gorget. I wish, however, to draw attention more particularly to the forceps employed for crushing and evacuating the stone. The specimen I am now showing, you will see, consists of a strong ordinary bladder forceps, with a cutting rib down the center. It is sufficiently strong to break any stone which can be fairly grasped; the blades are, in fact, constructed on the same principle as those of a lithotrite, and are intended for use in the same manner.*

Looking at the fragments of the stone removed from the young man whose case I have just related, it can be judged what this forceps is capable of doing, both in crushing and in extracting. In this instance it enabled me to break up and remove a calculus in a few minutes—a process which I do not think could have been safely accomplished under half an hour by the ordinary lithotrite and water evacuation.

I hardly think I need apologize for bringing under your notice an operation which may, in some cases, be revived with considerable advantage. Circumstances are now very different from what they were twenty-five years ago, when perineal lithotripsy had numerous advocates; Thompson had not then taught us the great value of digital exploration in diseases of the bladder; Otis had not demonstrated the full capacity of all parts of the male urethra to dilatation; Bigelow had not shown us the tolerance of the bladder to prolonged but gentle manipulations; nor had we learned the value of drainage and irrigation of the bladder, and how much operative surgery was capable of doing for the enlarged prostate when this was found to complicate stone. In the presence of these advances, I believe that perineal litholapaxy will be found of considerable service, and that its more general employment will tend to reduce the number of stone recurrences after litholapaxy as usually practiced.

ANEURYSM OF THE ARCH OF THE AORTA, OR OF THE INNOMINATE ARTERY.

SIMULTANEOUS LIGATION OF THE RIGHT COMMON CAROTID
AND RIGHT SUBCLAVIAN ARTERIES.

RECOVERY.

By JOHN A. WELLS, M. D.,
ENGLEWOOD, N. J.

THE recorded cases of the simultaneous double distal operation for aneurysm of the great vessels at the root of the neck are so infrequent, especially in American journals, that the accompanying history is offered as a contribution to the literature of the subject:

Mrs. P. B., colored, married, aged seventy, first came under the writer's observation on April 15, 1888. Rheumatism and strumous manifestations were family characteristics on both sides, and Mrs. B. had been subject to attacks of the subacute form of rheumatism for many years. On two occasions she

* "Diseases of the Urinary Organs," 1873.

* It is made for me by Messrs. Krohne and Sesemann, of London.

had had acute articular rheumatism, the last attack, two years ago, having been followed by pleuritis with effusion. There had been no cardiac involvement at any time to her knowledge, and a stethoscopic examination revealed no murmur. Eight years since, vision in the left eye had been destroyed by cataract. There was no history of trauma, and specific disease was denied. No appreciable evidences of tertiary trouble are present. For many years a small cervical gland situated near the apex of the superior carotid triangle has been subject to occasional enlargement, associated with much pain of a throbbing nature, pulsation being apparently transmitted from the external carotid artery. For the past two months the pain in this region has been much more severe than on any previous occasion, and two weeks ago she noticed for the first time that there was a slight fullness of the right side of her neck just above the clavicle, with an exaggerated pulsation, not present on the other side. While there was no pain whatever in this region, the pain in the region supplied by the external carotid had been so severe as to require the employment of opiates regularly for the past six weeks.

On inspection, the external carotid was evidently dilated, tortuous, and transmitting its pulsation through a small lymphatic gland which could be readily isolated from the artery. There was no expansile character to the pulsation of the external carotid and no bruit. In the right subclavian triangle there was present a second area of visibly exaggerated pulsation, heaving in character and expansile, but there was no distinct tumor either above or below the clavicle. On stethoscopic examination, a loud, rasping double bruit could be heard over a space about 3 ctm. in diameter above and below the clavicle. The point of greatest intensity was about 5 ctm. from the center of the episternal notch. The radial pulse being equal in time and volume in both arms, and there being no dyspnoea, cough, dysphagia, or enlargement of the superficial veins of the head and neck, with an exaggerated pulsation in the right carotid, would seem to the writer to favor more a diagnosis of aortic than of innominate aneurysm, while the absence of a distinct tumor above the clavicle and absence of dullness below the same, with no indications of pressure on the right vagus, trachea, or oesophagus, would indicate that there was no backward or lateral pressure. The location of the bruit and its particularly loud and rasping character, in conjunction with dilated vessels elsewhere and the negative symptoms mentioned, would seem to imply a fusiform dilatation of the ascending segment at about the junction with the transverse segment. Dr. Lewis A. Stimson, of New York, kindly saw the patient with me, confirmed the diagnosis of aneurysm, and agreed as to the advisability of operative procedures. The gravity of the operation was explained to the woman, and she eagerly expressed herself as willing to take any risks if there was a fair prospect of relieving her pain. On the 2d of May, with the assistance of Dr. Stimson and Dr. Banks, of Englewood, under antiseptic precautions, the right common carotid above the omohyoid and the right subclavian in its third division were exposed by the writer, with the usual incisions, and ligated successively with Am Ende asepticized catgut ligatures of the size known as No. 6. The carotid ligature was applied first. The vessel, when exposed, was seen to be decidedly dilated, probably to twice its natural size, and to the finger felt hard and incompressible. On tightening the ligature, a very slight degree of traction gave to the fingers the sensation of cutting calcified vessels. The subclavian was exposed without great difficulty, and was found to be less dilated than the carotid. An aneurysm needle with a double curve, designed for use upon the right side, was readily passed around the vessel. Both ligatures were cut short, small drainage-tubes introduced, iodoform was sprinkled

on the surface, and an antiseptic dressing of bichloride and iodoform gauze applied. Half an hour after removing the patient from the table the left radial pulse became very rapid, irregular, and feeble, with alarming syncope. Free stimulation with brandy and ether hypodermically, and the use of hot bottles about the patient, brought about reaction in a few hours. Several hours of sleep were obtained during the night, under the influence of half a grain of morphine hypodermically, and on the following morning the pulse was 100, temperature 100° F., and respiration 18. There was no pain whatever over the external carotid, and at the expiration of thirty-six hours, when the drainage-tubes were removed, the pulsation over the region of the innominate was seen to be manifestly reduced. Before reapplying the antiseptic dressing, a careful stethoscopic examination revealed but the faintest bruit. The temperature during her subsequent convalescence did not rise above 100° F., and was normal on the third day. The left radial pulse at this time was 84; at the time of operation it was 92. The right radial pulse returned so as to be perceptible on the twenty-second day. The dressings were removed on the twelfth day, and found to be quite dry. Both wounds were entirely healed throughout. She was allowed to sit up on the twenty-first day, and under a tonic regimen was soon about, apparently as well as before her neck commenced to trouble her. Before she left her bed no bruit whatever could be heard for several visits in succession, but after moving about considerably, in attending to her household duties, it became again appreciable, but much diminished in intensity and not heard at all below the clavicle. There has been at no time since the operation, now four and a half months ago, any return of the pain, for which the old woman is profoundly grateful, and no morphine has been necessary since. The pulsation is no more forcible at this date on the right than on the left side of the neck, and she expresses the opinion that her neck is entirely cured. A very slight bruit can be made out at this date, after physical exertion on her part of any kind, but entirely inappreciable when she is lying down or at rest. The ability to discontinue the opium, which the operation has afforded her, has of course been of signal service in improving her general health.

Whatever difference of professional opinion there may be in regard to the simultaneous double distal operation as a curative measure, the history of this case would tend to prove, as much as a single instance can do so, that advanced age, atheromatous arteries, and wretched surroundings are not necessarily insuperable obstacles to the success of an operation hazardous at best.

Correspondence.

LETTER FROM PARIS.

The Action of Iodine and its Salts.—Inoculation for Cholera.—Government Investigation of the Treatment of Tuberculosis in the United States.

PARIS, September 12, 1888.

THE action of iodine and its salts is so important a subject in medicine that I can not pass over the late communication of Professor Germain Sée to the Academy, as it sums up his clinical lectures during last winter at the Hôtel Dieu on that subject. Before giving Dr. Sée's ideas I must state that there is quite a little war declared between him and those who follow his opinion and Dr. Henri Huchard with his friends, in regard

to whether we should give iodide of potassium or iodide of sodium. Dr. Huchard's opinion is that the potassium salt should be banished from the treatment of such maladies as arteriosclerosis on account of the frequent localization of its action on the kidneys, exposing such patients to attacks of uræmia, or rather what he calls *potassiémie*. He also thinks that iodide of potassium injures the heart, if given for a long time, and he gives his preference to iodide of sodium, which he says is just as active and more inoffensive, as well as more easily assimilable. Professor Sée studies this question with great care, and his results are so interesting that I give them in some detail.

It was formerly wrongly supposed that the iodides acted by dissolving the blood, which would certainly be against their use in the treatment of aneurysm, where the coagulation of blood is desired; but recent studies have shown that iodides neither coagulate nor dissolve the blood; that only by toxic doses can a dissolution of the red globules be brought about; and that under ordinary conditions the albuminates and other elements of the blood (even solutions of hæmoglobin) can absorb a considerable quantity of iodine without losing their characteristic properties, *iodo-hæmoglobin* giving under the spectroscope the same spectrum as *oxy-hæmoglobin*. These facts prove to Dr. Sée that iodide of potassium can be given for long periods without the slightest inconvenience—just so long, in fact, as it can be tolerated—and does not produce more than a slight iodism of the mucous membranes and skin. When an iodide is pure and not mixed with an iodate it can often be given for years without digestive troubles or even diarrhœa; but there are any number of exceptions to this, and even when given in milk or cider it will sometimes disagree. Iodide of sodium in this respect has no advantage. Iodide of potassium is partly transformed into iodide of sodium in the stomach, so that the action of the latter drug is only better than that of the potassium salt *in theory*; the heart's rhythm, the vaso-motor action, and the blood-pressure, as well as the cerebro-spinal functions, remain intact under the use of all the iodides alike. Dr. Sée then gives his interpretation of the therapeutic effects of the iodides and finds that they have, clinically, three species of action: 1. *Anti-dyspnœic*. This is well shown by their undoubted efficacy in asthma when given in sufficient doses. 2. *Hyperæmic*. We know by clinical experience as well as by experimentation that iodine brings about a hyperæmia of the mucous membranes and the skin, sometimes producing epistaxis, metrorrhagia, ecchymotic stains, and hæmoptysis. Thus iodine causes the blood to circulate more rapidly, renews it, and prevents stagnant blood from acting on the centers in the medulla oblongata. All the vital changes are increased in activity. Respiration is made easier, as stated above, and the dyspnœa seen in asthma is readily cured, as well as all symptoms of suffocation and asphyxia. It is therefore a *pulmonary* medicine. This has been proved experimentally in Dr. Sée's service by M. Calmeils, who has shown that the iodides accumulate in large quantity in the lungs more than in any other organ. The intra-pulmonary circulation is increased by iodides, which seem to act by causing a hyperæmia of the pulmonary tissues and breaking up all venous stasis. 3. *Oxidizing or Atrophic*. This denutritive action is shown in the physiological state by reduction in the amount of the tissues and glands, and above all of the adipose tissue. In pathological states they produce an atrophy of the lymphatic glands and reduce syphilitic neoplasms, hypertrophied glands, such as the thyroid and mammary, and scrofulo-tubercular inflammations.

The therapeutical uses of the iodides are summed up by Professor Sée as follows: 1. As an anti-dyspnœic, as they liquefy all catarrhal products. 2. In all circulatory troubles, as they produce a hyperæmia of the organs, particularly of the intra-pulmonary tissues, and suppress venous stasis. 3. To reduce

the volume of an aneurysm, as they retract the walls and the tissues that surround them. 4. By reducing the bulk of tumors to take away pain resulting from pressure on nerves.

Professor Sée gives thirty-grain doses of iodide of potassium, as in the following:

R Iodide of potassium..... 1½ oz;
Syrup of diacodium..... 6 oz;
Syrup of bitter orange..... 9 oz.

M. Sig.: A teaspoonful to a dessertspoonful.

(The diacodium syrup is, in the French codex, a syrup containing one sixth of a grain of opium to five drachms of syrup.)

The differences of opinion between the "sodiumists" or the *potassiophobes*, as Dr. Sée calls them, and himself, are shown by the eminent professor to be wide. He finds that the sodium has no advantage over the potassium salt.

M. Pasteur, the eminent chemist, has presented to the Academy of Medicine a note from Dr. Gamaleïa, a Russian physician, who was formerly a student in Paris, and is now attached to an anti-hydrophobic laboratory in Odessa. He proposes to introduce inoculation for Asiatic cholera. It is understood that, so far, his experiments have been made on animals. He shows that if one inoculates a cultivation of the comma bacillus in a guinea pig and thence carries the virus to a pigeon, one obtains a very active virus, which is contained in the pigeon's blood. After a few passages have occurred, one or two drops of this choleraic pigeon's blood will kill healthy pigeons in from eight to twelve hours with symptoms of real cholera. This point settled, M. Gamaleïa thought that immunity from cholera could be obtained. Heating his cultivations up to 248° F. to destroy all living elements, he found that there remained a chemical substance that was very active, and, on inoculating this progressively in pigeons, they were cured of their cholera and remained refractory to it afterward. This new method of *chemical inoculation* is quite difficult to believe in. We have always been led, at least in modern days, to think that there was a vital element in disease. It is easy to find all sorts of objections to this new theory, and M. Gamaleïa will find great difficulty, when he comes to Paris this fall and winter, in making us believe in his addition to science. We all follow with great interest the work of M. Pasteur's students and hope that it will come to something definite and practical; but we can not refrain from giving a note of warning. The normal temperature of pigeons is about 104° F. or over, while in man it is 98.6° F. The conditions are not the same, and we trust there will be no haste in applying this new cure to man, notwithstanding the large numbers of enterprising journalists and others who offer themselves for inoculation. Without wishing to depreciate M. Pasteur's great talents, we can say that the results from the inoculation for rabies are not good, and the lists of deaths from hydrophobia *after treatment* are daily growing larger. Professor Peter has constantly spoken against the premature attempts made of this kind, which only result in a defeat for real science.

We have but little local medical news, as the faculty does not open till next month. Dr. H. Frémy has just been instructed by Government to visit the United States and study the public and private establishments there where tuberculosis is treated. The French Government gives such missions constantly to local men who desire them. Dr. Dujardin-Beaumetz goes to Russia to study the system of hospitals and medical study there, and Dr. Vial to Spain; others are sent to study up specialties, such as of the eye and throat. On their return they maké up a good report, from which the best is taken for use in France. I should like to suggest that the United States also send medical men on missions to study up "how it is done" in Europe for the benefit of science, but I fear there are great difficulties in the way.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 6, 1888.

THE MECHANISM OF THE SEPARATION OF THE PLACENTA.

DR. D. BERRY HART, of Edinburgh, a most ingenious student of obstetrical problems, has recently suggested an explanation of separation of the placenta which differs from all the theories that have heretofore been advanced. It is the outcome of certain post-mortem investigations that he has made with reference to the anatomy of placenta prævia. He found that complete longitudinal sections of the anterior wall of the uterus showed a segment 11.25 ctm. long, covered with peritonæum and having remnants of placenta on its inner surface, its lower limit being a circular vein marking the contraction ring; a lower corporeal segment 3 ctm. long, uncovered by peritonæum and having placental remnants on the upper half of its inner surface, its lower limit being the os internum; and the cervix, 3.7 ctm. long, ending in the os externum and lined only with cervical mucous membrane. It was evident that during labor the uterine muscle above the contraction ring was contracted and shortened, while below the ring it was expanded and lengthened. In placenta prævia, therefore, the placenta was inferred to be separated from the lower uterine segment not by contraction, but in the course of expansion. This being the case, Dr. Hart reasons that a similar process may obtain in cases of normal placental implantation. The objections which he raises to the usual theories of the separation of the placenta—that it is due either to retraction of the uterus, to the formation of a retroplacental blood clot, or to the extrusive force of the uterus—are: 1. Diminution of the placental bulk occurs *pari passu* with that of the placental site as the uterus retracts. If separation were due to the retraction of the uterus, it would occur with the latter, and there would not be a simultaneous diminution of both the placenta and its site of attachment. 2. The retroplacental clot can not be the essential cause, for it does not always form. 3. The extrusion, or detrusion, theory seems plausible, but there are some cases of adherent placenta in which the lower part becomes separated and not the upper, and in those cases it is evident that the separation is not due to detrusion.

Hart therefore suggests that the probable mechanism of separation is as follows: The placenta separates not from diminution of the placental site, but during the expansion of that site after retraction. The placenta does not increase in area after retraction of the uterus, as its site of implantation does, but remains smaller than the latter. This can not be proved directly, but is inferred from the fact that the blood in the fetal portion has been aspirated by the child, and the uterine muscle must increase in bulk more rapidly than the placenta, as the blood returns to it first. In the third stage of labor, there-

fore, the placenta separates as in placenta prævia. This will explain the occurrence of the retroplacental clot, which is the consequence and not the cause of placental separation during uterine relaxation.

The author of these suggestions admitted that they were not based on direct observation, but on analogy, and that the latter might not be sustained by subsequent investigations. Moreover, the new views were not received unhesitatingly by the members of the Edinburgh Obstetrical Society, before whom they were uttered. Professor Simpson expressed a doubt as to the existence of sufficient force to effect the separation of the placenta during uterine relaxation; Milne Murray still adhered to the belief that increase in the blood-pressure during relaxation caused the separation; and Freeland Barbour objected to the proposition that the placenta did not expand with the uterus after contraction, since it expanded without separation during the first stage of labor, also in the second stage, and probably in the beginning of the third stage—in placenta prævia, the expansion of the uterine wall caused the latter to separate from the placenta, but the case was different in the third stage of normal labor, when the placenta was not stretched as in placenta prævia, so that it was not possible to reason from one condition to the other.

It must be admitted that this question is a difficult one, and that, as Hart says, if the expulsion of the placenta depended on an obstetrician's knowing how it separated, no woman in labor would complete her third stage. There is good reason for thinking that all the theories that have been advanced have been founded on observed facts, and it is rather presumptuous to say that any observer has erred in his interpretation of the facts. In many cases the so-called third stage of labor is in the highest degree an arbitrary division, for the placenta and membranes are evidently separated by the same forces that expel the child, and follow it with no perceptible interval of time.

EXECUTION BY ELECTRICITY.

IN connection with the law recently passed in New York State providing that after a certain date capital punishment should be carried out by the application of electricity instead of by hanging, we notice that our English contemporaries are prepared to see the experiment end in failure, and we confess to a fear that this may be the result. It will be remembered that the law was only adopted after the committee appointed to investigate and report on the question had tried to get an expression of opinion as to the easiest mode of death from many of our prominent men. As we remember the printed questions, the choice lay between the use of hydrocyanic acid and that of electricity. Probably the majority of answers were in favor of the latter, as the Legislature adopted the report and immediately passed the law in favor of electricity.

It has more than once been suggested by scientific men that electricity was too uncertain a means of causing death to ever be thoroughly reliable. Cases of stroke by lightning, in which the sufferer has been rendered unconscious, the body badly

seared, and the victim apparently killed outright, but from which recovery has rapidly taken place, have been cited, and the inference has been drawn that, if lightning in such quantity would not always kill, no certainty could be placed in any artificial means of applying electricity.

The "Lancet" (August 4, 1888), in an article on "Painless Killing," quotes Benjamin Franklin's letter to his friends Dubourg and D'Alibard in 1773, on the painless killing of animals for food by electricity; and one to Collinson, in which he gives an account of his own experience in killing a turkey by electric shock. In this experiment he very nearly killed himself.

Owing to the recent advances in electric science, and judging from the frequent deaths reported from electric wires in New York, there would seem to be little doubt that the means may be made effectual without danger to the operators, but we shall watch the practical trial of the method with great interest.

Dr. Richardson, before the Royal Society for the Prevention of Cruelty to Animals, in 1869, demonstrated that the process was full of difficulties. In these trials sheep were stricken down by the shock, but a charge of ninety-six feet of surface was required to be sure of the effect; with every precaution the workmen were exposed to great danger; and the expense was found to be very great when many animals were to be killed.

Besides the question of the practicability of the method in the case of criminals, there is the doubt of the expediency of euthanasia for criminals, the probability being that any such scheme will deprive the death penalty of many of its supposed deterrent effects. It is a fact, we believe, that more than one answer to the committee's inquiries as to the best method of inflicting the death penalty was to the effect that it should not be inflicted at all, either by hanging or by any less painful method.

MINOR PARAGRAPHS.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

WE have refrained from comment on the first meeting of the congress until the impression made by it could be appreciated clearly. We have no hesitation in saying now that it seems to have been in every way profitable and enjoyable. The proceedings of the general meetings were properly confined to the president's address and to the consideration of scientific subjects, to the utter exclusion of the miserable quasi-political matters that so often distract the attention of large meetings. There is reasonable assurance that this excellent policy will be adhered to in the future, and we can hardly doubt that the organization is destined to exert a beneficent influence on the American profession. We think, however, that a change for the better might be made in regard to a minor detail, that of the time of holding the meeting. In our opinion, it would be far better to hold it in May or June than in September. Under the present arrangement, the secretary of each participating society must either stay at home all summer or else neglect his work. Moreover, the proceedings would stand a much better chance of adequate publication in the journals during the summer months than in the autumn, when the pressure of other matter brought out by

the opening of the season of society work is likely to lead to a curtailment of the reports.

FLIES AS CARRIERS OF INFECTION.

A CONTRIBUTOR to "Nouveaux remèdes" cites a statement by a Brazilian physician to the effect that in hot countries flies are the most active agents in the propagation of yellow fever, and adds that M. Spilmann and M. Hanstoutter attribute the same rôle to those insects in spreading pulmonary consumption. When a fly has lingered on tuberculous sputa, it is said, its intestine and excreta contain the bacillus of tuberculosis, which it may deposit on various articles in an apartment. Flies are credited also with being the chief instrument in the dissemination of Egyptian ophthalmia, and Koch is cited as of the opinion that they may play the same part in spreading cholera.

THE QUESTION OF THE CONNECTION BETWEEN UNIVERSITIES AND MEDICAL SCHOOLS.

PROBABLY nobody who is well informed on the subject doubts that in some respects medical teaching in this country would be improved if every medical school could be made, as a few of them are now in reality and several more nominally, a department of some university worthy of the name. To those whose information on this matter is defective, and, indeed, to all who are likely to be interested in a scholarly and logical presentation of the question, we commend an address on "Some of the Advantages of the Union of Medical School and University," recently delivered at Yale University, by Dr. William H. Welch, professor of pathology in the Johns Hopkins University, which has been reprinted in pamphlet form from the September number of the "New Englander and Yale Review." In many instances, notably in New York, there are great practical difficulties in the way of such a union at present, but it must come sooner or later, and then perhaps we shall realize the truth of this statement, made to Dr. Welch by a professor of physiology in a German university: "When America does wake up to the necessity of these things, then let Europe look to its laurels."

THE DIURNAL MINIMUM OF VITAL FORCE.

THE daily recurrence, even in health, of a period of depression of the vital forces, when unfavorable changes are prone to show themselves in the course of acute diseases, has often been made the subject of study, and writers are pretty well agreed that such a period takes place in the early morning hours. The matter has lately been treated of anew by Dr. Thomas Linn, an American physician practicing in Paris, in a monograph entitled "De l'habitude et de ses rapports avec l'hygiène et la thérapeutique." Dr. Linn's conclusions are that there are certain laws of habit that deserve the attention of physicians, inasmuch as they furnish therapeutical and hygienic indications; that one of the most important manifestations of the periodicity of habit is the period of vital depression that occurs between four and six o'clock in the morning; that special pains should be taken to tide sick persons over this period of feeble resistance, thereby possibly saving many patients' lives; and that the causes of habit and functional periodicity should be further investigated, with a view to improvement in managing them. Dr. Linn treats of various collateral topics of interest, and his brochure is well worth careful study.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the follow-

ing statement of cases and deaths reported during the two weeks ending October 2, 1888:

DISEASES.	Week ending Sept. 25.		Week ending Oct. 2	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	55	15	95	20
Scarlet fever.....	68	12	77	10
Cerebro-spinal meningitis....	1	1	4	4
Measles.....	62	11	60	4
Diphtheria.....	44	11	80	16
Small-pox.....	3	0	0	0

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 16 to September 29, 1888:*

By direction of the PRESIDENT, the Army Retiring Board at San Francisco, California, convened by War Department order dated July 20, 1886, published in S. O. No. 168, July 22, 1886, from Headquarters of the Army, is dissolved. Par. 1, S. O. 217, A. G. O., September 18, 1888.

WOODHULL, ALFRED A., Major and Surgeon. By direction of the Acting Secretary of War, the leave of absence granted in S. O. No. 148, June 27, 1888, from this office, is extended fifteen days. Par. 14, S. O. 218, A. G. O., September 19, 1888.

GIBSON, ROBERT J., Captain and Assistant Surgeon is, by direction of the Acting Secretary of War, relieved from duty at Alcatraz Island, California, and will report in person to the president of the Army Medical Examining Board, New York city, on October 16, 1888, for examination for promotion; on completion of his examination, Captain Gibson will proceed to Fort Trumbull, Connecticut, and report for duty to the commanding officer of that post, reporting by letter to the commanding general, Division of the Atlantic. Par. 13, S. O. 217, A. G. O., September 18, 1888.

MORRIS, EDWARD R., First Lieutenant and Assistant Surgeon, is, by direction of the Acting Secretary of War, relieved from duty at Fort Thomas, Arizona, and will report in person to the commanding officer, Fort Shaw, Montana, for duty at that post, reporting by letter to the commanding general, Department of Dakota. Par. 14, S. O. 217, A. G. O., September 18, 1888.

STERNBERG, GEORGE M., Major and Surgeon, by direction of the President, will proceed to Decatur, Alabama, and to such other points in the infected districts of the Southern States as he may deem necessary, to continue his scientific investigations of yellow fever. Par. 8, S. O. 224, A. G. O., Washington, September 26, 1888.

Under authority from Headquarters of the Army, A. G. O., dated September 22, 1888, Major CHARLES B. THROCKMORTON and Batteries K and M, Second Artillery, comprising the garrison of Jackson Barracks, New Orleans, La., will proceed at once, by sea, to New York Harbor, and upon arrival there will take post at Fort Wadsworth, New York Harbor. A small guard of enlisted men will be left at Jackson Barracks. Major JOHN W. WILLIAMS, Surgeon, will accompany the troops to New York Harbor. Major HARVEY E. BROWN, Surgeon, will remain at Jackson Barracks. Par. 12, S. O. 202, Headquarters Division of the Atlantic, Governor's Island, New York city, September 26, 1888.

WHITE, ROBERT H., Major and Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. Par. 7, S. O. 199, Headquarters Division of the Atlantic, Governor's Island, New York city, September 22, 1888.

WOODRUFF, EZRA, Captain and Assistant Surgeon, is granted, by direction of the acting Secretary of War, leave of ab-

sence for six months on surgeon's certificate of disability' with permission to leave the Division of the Missouri. Par. 5, S. O. 223, A. G. O., September 25, 1888.

MATTHEWS, WASHINGTON, Captain and Assistant Surgeon, is detailed, by direction of the acting Secretary of War, as a member of the Army Medical Examining Board appointed to meet in New York city, October 1, 1888, by Special Orders No. 203, September 1, 1888, from this office, vice Major George M. Sternberg, Surgeon, hereby relieved from his detail as a member of the board. Par. 3, S. O. 224, A. G. O., Washington, September 26, 1888.

HOFF, J. VAN R., Captain and Assistant Surgeon, upon the recommendation of Captain Daniel Weisel, Assistant Surgeon, senior medical officer, camp of instruction of the Fifth Cavalry, is assigned in charge of active operations of the hospital corps in that camp. Par. 2, S. O. 121, Headquarters Department of the Missouri, Fort Leavenworth, Kan., September 22, 1888.

WILSON, GEORGE F., Captain and Assistant Surgeon, is granted, by direction of the acting Secretary of War, leave of absence, to include May 3, 1889. Par. 14, S. O. 223, A. G. O., September 25, 1888.

The resignation of Captain GEORGE F. WILSON, Assistant Surgeon, has been accepted by the President, to take effect May 31, 1889. Par. 15, S. O. 223, A. G. O., September 25, 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person, on October 9, 1888, to the president of the Army Medical Examining Board, Army Building, New York city, for examination for promotion: BENJAMIN MUNDAY, Captain and Assistant Surgeon; WILLIAM O. OWEN, Jr., Captain and Assistant Surgeon. Upon the completion of their examination to rejoin their stations. Par. 15, S. O. 225, A. G. O., Washington, September 27, 1888.

Naval Intelligence.—*Official List Changes in the Medical Corps of the United States Navy for the two weeks ending September 29, 1888:*

CABELL, A. G., Passed Assistant Surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

BAKER, J. W., Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Mass., and ordered to the Palos.

LEACH, PHILIP, Passed Assistant Surgeon. Detached from the Palos and granted six months leave abroad.

SIMONS, M. H., Surgeon. Detached from the Naval Academy and to wait orders.

HAEMON, G. E. H., Surgeon. Ordered in charge of the Naval Academy.

PICKREL, GEORGE McC., Assistant Surgeon. Detached from the New Hampshire and ordered to the Ossipee.

ARNOLD, W. F., Assistant Surgeon. Ordered to the New Hampshire.

HENRY, C. P., Assistant Surgeon. Detached from the Ossipee and granted sick leave.

CORDEIRO, F. J. B., Assistant Surgeon. Promoted to the rank of Passed Assistant Surgeon.

SPEAR, J. C., and RHOADES, A. C., Medical Inspectors. Placed on the retired list September 14th.

HUDSON, ADRIAN, Medical Inspector. Ordered for examination preliminary to promotion to Medical Director.

BATES, NEWTON L., Medical Inspector. Ordered for examination preliminary to promotion to Medical Director.

COOKE, GEORGE H., Surgeon. Ordered for examination preliminary to promotion to Medical Inspector.

BRADLEY, MICHAEL, Medical Inspector. Ordered as member of Naval Examining Board.

WELLS, HENRY M., Medical Inspector. Relieved from duty as member of Naval Examining Board.

SIMONS, MANLY H., Surgeon. Ordered to Widow's Island Naval Hospital.

HEFFENGER, A. C., Passed Assistant Surgeon. Detached from Naval Hospital, Widow's Island, and to wait orders.

Society Meetings for the Coming Week:

MONDAY, *October 8th*: New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynecological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *October 9th*: New York Medical Union (private); Medical Societies of the Counties of Albany (annual), Chenango (tri-annual), Greene (semi-annual—Cairo), Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Rensselaer, Schoharie (semi-annual), Tioga (quarterly—Owego), Wayne (semi-annual), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Bergen, N. J., and Cumberland, N. J. (semi-annual), County Medical Societies; Litchfield, Conn., County Medical Society (annual); Baltimore Gynecological and Obstetrical Society.

WEDNESDAY, *October 10th*: New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis); Pittsfield, Mass., Medical Association (private); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), Middlesex South (Cambridge), Mass., Medical Societies; Vermont State Medical Society (annual—Montpelier); Philadelphia County Medical Society.

THURSDAY, *October 11th*: New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *October 12th*: New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y. (anniversary).

SATURDAY, *October 13th*: Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Proceedings of Societies.

AMERICAN OTOLOGICAL SOCIETY.

Meeting, Supplementary to the Twenty-first Annual Meeting, held at Washington, September 18, 1888.

The President, Dr. J. S. PROUT, of Brooklyn, in the Chair.

The Primary Physiological Purpose of the Membrana Tympani.—A paper with this title was read by Dr. S. O. RICHEY, of Washington, in which a history of the comparative development of the eye, the lungs, and the ear, as animal life progressed from the lower to the higher forms of life, was given. Change of environment brought with it gradual al-

teration in organic form, better calculated for the perpetuation of the life of the individual and of the species. The existence of a large labyrinth or perceptive organ in the lower forms inhabiting water was remarked, and that this became smaller in the better-developed amphibian and the land animal; that it was smallest in mammals.

The writer thought that this small labyrinth in man needed protection from the desiccating influence of the air, and that the membrana tympani was designed primarily for this purpose; that its function, as a part of the mechanism for the transmission of sound, was *secondary*, and *because it already existed*. Water was a good conductor of sound, and the animals inhabiting it needed only a perceptive organ which was relatively large. Those which lived out of the water had the smaller labyrinth more deeply situated. The drum membrane prevented the drying and parching of the tissues of the middle-ear cavity, exosmosis of the labyrinthine fluid through the membrana secundaria, and its evaporation and consequent exhaustion, by the exclusion of unmodified air. In oto-sclerosis profound deafness might take place by this process, because of the dry nares and pharynx, and the free access by way of the Eustachian tube, of enlarged caliber, though the membrana tympani was intact. By this evaporation the tissues of the middle ear were rendered less pliable and delicate, and by diminution of the labyrinthine fluid less motion was transmitted by the conducting apparatus receiving the impact of sound waves to the auditory perceptive filaments. The following conclusions were made:

First.—The primary purpose of the tympanic membrane was that of protection to the tympanic cavity from the evaporating influence of the air; to prevent parching and stiffening of the membrana secundaria, the joints of the ossicula, and the tendons of the tympanic muscles.

Second.—It, being necessary for the protection of the cavity, was modified into part of a transmitting mechanism by the existence of the ossicula and their attachments; a secondary physiological purpose.

Third.—A permanent opening of the membrane might, under given circumstances, temporarily improve the function of hearing, but was harmful to the ultimate condition of the organ.

Fourth.—The tendency of the membrane to heal was an effort on the part of nature to preserve the function of hearing from the effects of disease or ill-advised surgical interference.

Dr. C. H. BURNETT, of Philadelphia, thought we must all admit that the function of the membrana tympani was in great measure protective—primarily so, perhaps—and he considered its rapid healing and the persistence with which it healed after surgical interference as very significant. But there was one function which the reader had not mentioned; that was its adaptability by means of the tensor tympani muscle to the different character of the sounds which it transmitted.

Dr. JOHN GREEN, of St. Louis, said that the tympanum was a mucous and not a synovial cavity.

Dr. WILLIAM H. CARMALT, of New Haven, said that, in considering the character of the tympanic cavity, we must remember the method of its development in the embryo, which was such as to enable us to classify it as mucous.

Dr. RICHEY said, in closing the discussion, that there was no fixed amount of secretion in the labyrinth, but a dryness of the middle-ear surfaces allowed a passage of moisture through tissue from the former cavity to the latter, where the evaporation took place.

A Case of Cerebral Abscess following extensive Necrosis of the Temporal Bone; Operation; Death from Secondary Hæmorrhage; Autopsy.—Dr. GORHAM BACON, of New York,

read a paper with this title, in which he gave the history of a patient, aged thirty, who came to the New York Eye and Ear Infirmary, September 27, 1887, on account of a chronic purulent discharge from the left ear of two years' standing. His general health had always been good, and he denied ever having had syphilis. The left auditory canal was filled with granulations and polypi. These were repeatedly removed with the snare and cauterized, but speedily returned. The patient was under observation during the following winter, but did not always attend regularly, and was very imprudent about taking care of himself. There was evidence of extensive necrosis of the temporal bone taking place, and a sinus was found in the anterior wall of the cartilaginous canal, leading forward and inward. There was a large polypus attached at the opening of the sinus. It was very difficult to keep the auditory canal pervious, and to allow a proper escape for the pus. All through December the patient suffered great pain in the ear, especially at night. There was no evidence of mastoid disease. This condition of affairs continued until about January 10th, when facial paralysis developed on the left side. In the latter part of January an abscess appeared just above the pinna. This was opened, and a probe introduced passed downward in front of the ear. The patient was considerably relieved, but this was but temporary. The polypi returned in the auditory canal. On February 24th the patient entered the infirmary as an inmate, and, after ether was given, the author found that this abscess cavity communicated with the sinus through the wall of the auditory canal. A drainage-tube was passed through from the opening above the pinna, and brought out at the sinus in the auditory canal. The cavity was washed out with a bichloride-of-mercury solution and dressed with iodoform. There was found extensive necrosis of the anterior wall of the auditory canal and tympanum. An incision was made over the mastoid and the bone perforated, but nothing was found here except extreme hardness of the bone. The patient then seemed to improve very rapidly, and was soon able to go out every day, and the pain seemed to be relieved. It was necessary to make another counter-opening to drain the abscess.

Suddenly, on March 7th, the patient complained of pain through the forehead and down the side of the neck. At 11.30 P. M., having been restless all the evening, he pulled off his bandage, although he did not object to having it replaced. The only answer the house surgeon could get from him was "Yes, sir," to every question, although he seemed to make an effort to say something else. He would put out his tongue, and give his right hand when told to. The pupils were normal in size, and responded readily to light. No sensory or motor paralysis and no photophobia were present. An examination of the eyes showed nothing. Urine normal. Temperature in the mouth 102.3° F., pulse 106, respirations normal.

March 8th.—Temperature 101° F., pulse 93, and respiration normal. Cerebral condition exactly the same. The dressing over the ear contained an increased amount of pus and there were bogging and swelling over the zygoma and malar bone. There was puffiness of the left lower eyelid. Cerebral abscess was suspected and Dr. R. F. Weir was called in consultation. At Dr. Weir's suggestion, an opening was drilled in the mastoid antrum, but it was only found that the bone was very dense and hard as before. Dr. Weir then carried the incision above the auricle forward, cutting the temporal artery and displacing the auricle forward so that an examination could be made of the parts in front of the ear.

As Dr. Weir was present, the speaker asked him if he would kindly describe the further steps in the operation.

Dr. WEIR said that it was his intention, being here, to be of any service possible in case of a discussion, by speaking of the

matter as it presented itself to him, and he would gladly do so. Here was a patient with pre-existing ear disease, suddenly attacked with ataxic aphasia and a certain amount of temperature elevation. There were two points to be considered—viz.: First, it must be made sure that it was not mastoid trouble. This was done by cutting down on the mastoid, which gave no evidence of disease. The second point was to eliminate or to discover any subdural inflammation. This might have been done by continuing the same opening and making it deeper, and opening the cranium above the petrous bone. On account of the healthy condition of the mastoid, this was thought to be unnecessary. The anterior sinus was explored and found to lead to an opening in the sphenoid bone, where a pulsating mass was found. On puncturing this, pus was let out, and subsequently the opening was enlarged and about half an ounce of pus and broken-down brain tissue was removed. A drainage-tube was then put *in situ* and the wound subsequently dressed. Between midnight and the following morning the patient had some lucid moments, although he subsequently relapsed into the same state he had been in before the operation. Then, after consulting with Dr. Seguin, by trephining, a counter-opening over Broca's convolution was made and a rubber drainage-tube was inserted, and brought out through the first opening. He specified this method because he thought it had much to do with the unfortunate result from secondary hæmorrhage, on account of the proximity of the middle cerebral artery, which was probably injured by the tube or by the string attached to it in its introduction, so that it probably gave way.

Dr. SEXTON asked Dr. Weir if he would operate in case of pachymeningitis.

Dr. WEIR said that that was a question of speculative surgery. It might be said that it would be difficult to get drainage in such a case, but a good deal could be done; the parts could be separated more or less with the finger, and catgut or horse-hair inserted.

Abscess of the Neck associated with Suppurative Otitis Media and Iritis.—Dr. O. D. POMEROY, of New York, reported the history of a case occurring in a man, aged fifty, who had been treated by him last winter for otitis media purulenta, and had recovered. Some months after that he had had an iritis with synechiæ. The globe was not painful. He had suggested an iridectomy, not thinking that atropine would break up the adhesions. The patient was not under the speaker's care at the time. The next week he had heard that he had pus in the anterior chamber, and a week later the anterior chamber was full of highly organized purulent matter. A paracentesis was done, and the wound was kept open with a probe. Applications of hot water were used. The speaker was sure that the eye would be lost, and in a few days the sclera became perforated and pus was discharged. About this time a swelling was noticed in the neck, which was thought to be rheumatic. After consultation with Dr. Webster, the eye was enucleated. The conjunctiva and sclera were united by many adhesions. After a few days the trouble in the neck was so much worse that it was thought it might be a complication of the eye and ear affections, and examination gave evidence of a fluctuating tumor under the lobe of the ear. A day or two before, an examination of the eye had revealed no pus, and the ear had been treated with nitrate of silver. The next day the swelling was opened, and discharged one or two ounces of pus; a probe was passed into the meatus and dead bone was found. No connection could be made out between the abscess in the neck and the trouble in the ear. The patient was now doing well, and the drum membrane was healing up. During the latter part of the trouble the temperature was raised, and blood-poisoning was suspected. Few cases of this kind had been reported. Dr. Kipp, of New-

ark, had had two, and explained the eye trouble as coming either from septic material which had passed into the blood, or from a meningitis which had extended to the eye by way of the optic nerve. In Dr. Kipp's cases enucleation had not been performed, but in this case the man could not well take time for a slow recovery.

Chronic Purulent Inflammation of the Tympanic Attic.

—Dr. BURNETT, of Philadelphia, read a paper on this subject based upon the observation of ten cases additional to ten cases already published. The history of the cases showed that the disease was characterized by great diminution of hearing, obstinacy of discharge, scanty and offensive in odor, and practically incurable by the ordinary means of treatment heretofore in use. Children were rarely afflicted by this chronic disorder. The most important considerations in the treatment of this disease were cleansing and disinfecting the diseased attic, best accomplished by injections of carbolic acid and peroxide of hydrogen, effected by means of the tympanic syringe; a free drainage, best accomplished and maintained by enlarging the perforation in the membrana flaccida; or excision of the membrana tympani and the malleus and incus.

Excision of the Drum-head and Ossicles for the Cure of Chronic Purulent Inflammation of the Attic of the Tympanum.

—Dr. SAMUEL SEXTON, of New York, read a paper on this subject, in which he said that in the usual medical management of such cases with syringe, canteries, and astringents, either wet or dry, according to vogue, it was surprising how much ineffectual work might be done in a conventional way in so small a receptacle for medicaments as the drum of the ear. He had been much impressed with the advances made in general surgery, and especially interested in several operations about the joints. He had, on reflection, been very much struck with the analogy the condition of these patients offered to what existed in chronic suppurative disease of the attic of the drum, where there might be chronic inflammation of its muco periotteal lining with caries of its bony walls and of the ossicles, together with synovitis of the articular surfaces of the latter. The aural cases in which excision was indicated constituted a much larger class than was embraced in the comparatively few long-standing examples where the more prominent symptom was the occasional occurrence of slight discharge through a sinus in the membrana flaccida. A radical cure by the knife seemed called for, as in diseases of the joints, in run-down, cachectic subjects, especially those who had been long neglected or badly treated, and where the condition of the attic offered great obstruction to drainage. In chronic suppuration of the tympanic attic it was often found that the greater portion of the drum-head, comprising the membrana vibrans, was largely or wholly absent, and the membrana flaccida infiltrated, thickened, and often inverted, while the cavity itself contained more or less granulation tissue, thickened folds of muco-serous membrane, and useless portions of the transmitting mechanism. The muco-purulent secretions now found a precarious outlet through one or more sinuses; painful accumulations took place, and, owing to the near proximity of the drum to the brain, danger to life was much greater than in similar conditions elsewhere. Even where the attic disease ceased to be active and had seemingly been cured by an expectant course or other treatment, the trouble was apt to break forth again and again, along with invasions of the middle-ear tract during the existence of head colds, when the surgeon could but regret not having removed the remains of the defective mechanism and other diseased tissues from the attic at an early day, since exacerbations of purulent discharge might thus be avoided, while hearing was usually very much improved. It was the author's experience that, while we could not under all circumstances treat the ear so antiseptically as

might be done in the joints, we could generally insure free drainage, which constituted the main feature of treatment in chronic suppurative diseases.

The Employment of Boric Acid in Solution in the Treatment of Otitis Media Suppurativa.

—Dr. SAMUEL THEOBALD, of Baltimore, read a paper upon this subject. In the ordinary cases of chronic suppurative otitis media, in which there was usually extensive destruction of the drum-head, he used boric acid in powder, applying it by means of insufflation; but in acute cases and in chronic cases in which the destruction of the drum-head was not extensive, and in which a closure of the perforation might be anticipated, he preferred to use a saturated solution of boric acid. The advantages which he alleged for the solution in such cases were, that the healing of the perforation in the drum-head was more certain to be brought about when it was used than when the powder was employed, since the latter, by too suddenly drying the ear, and also by its mechanical action, frequently prevented the restoration of the drum-head; that in acute cases it was safer, since it could not obstruct the free escape of discharge from the middle ear, as the powder sometimes did; and that it could be applied more effectually than the powder could by unskilled hands. In his own practice no serious consequences had ever resulted from the application of boric-acid powder to the ear; but reference was made to the three fatal cases of suppurative inflammation of the middle ear, reported by Dr. Gruening, in which the fatal result was attributed to the introduction—in two of the cases by packing, in the other by insufflation—of boric-acid powder into the auditory canal. The strength of the solution which he commonly employed was fifteen grains to the ounce. If the discharge was profuse, the ear was syringed with this three times a day, and less frequently as the otorrhœa declined. In office practice it was more convenient, after having cleansed the ear by means of the syringe or cotton-holder and the Politzer bag, to instill the boric-acid solution (saturated) with a pipette. Several cases were related which illustrated the good effects of this method of treatment, especially in acute suppurative otitis media.

Some discussion followed in which it seemed that the experience of different members of the society in regard to the use of boric acid was not the same.

Nasal Difficulties in Ear Diseases.

—Dr. J. O. TANSLEY, of New York, read a paper in which he mentioned the following points which he wished to consider: 1. Anything which wholly or partially occluded one or both nostrils. *a.* Deviated septum. *b.* Edematous tissue. *c.* Hypertrophied tissue, such as exostoses, hyperostoses, etc. *d.* Nasal polypi. 2. Hypertrophied tissue peculiarly placed, but not necessarily occluding. 3. Hypertrophied tissue exciting as well as mechanically pressing upon the Eustachian tube. 4. Bands of tissue seemingly cicatricial, stretching from the posterior wall of the pharynx to the Eustachian tube. 5. Atrophic or cicatricial rhinitis, with unusually patulous Eustachian tubes. 6. Simple naso-pharyngeal catarrh. *a.* Simple mucous catarrh. *b.* Muco-purulent or hyperplastic catarrh. *c.* Fibrous catarrh. *d.* Ozenic catarrh with inspissated crusts. Finally, anything which wholly or partially occluded one or both nostrils. The author took up each point separately, and concluded the paper by saying that nasal difficulties caused ear diseases in four ways: 1. The blood dyscrasia or catarrhal diathesis which caused one would also cause the other, and in these conditions there was no natural sequence whatever from one to the other. 2. The gradual invasion of one mucous cavity by the catarrhal disease of an adjoining and communicating mucous cavity; here there was a natural sequence from the nose to the ear. 3. The congestions, suddenly occurring and

often repeated, which were brought about by the difficulty of clearing the nasal cavity, and that nasal difficulty which offered the most resistance to the free passage of air through the nasal cavities would cause the greater number and most serious diseases. 4. The influence which peripheric nerve irritations of the nose might have upon the ear. This latter was undoubtedly a present fact in many ear diseases, but the speaker was not then prepared to state his views on the subject.

These four facts being proved, our indications were simple and definite, and as follows: *Firstly*—to combat the blood dyscrasia. *Secondly*—to cure the catarrhally inflamed mucous membrane and restore its normal function. *Thirdly*—and, if anything, the most important of them all—to free the nasal and naso-pharyngeal cavities from all obstructions and encourage nasal breathing.

Influence of the Use of the Telephone upon the Hearing Power.—A paper on this subject by Dr. CLARENCE J. BLAKE, of Boston, was read by Dr. John Green, of St. Louis. The author said that the assertion made by him several years since, that the habitual use of the telephone would be prejudicial to the hearing in many cases where the hearing was already impaired, was based upon the well-known facts of the process of accommodation in the middle ear for the transmission of tones of low intensity, of the susceptibility of the percipient apparatus to shock from sharp sounds of high intensity under the conditions of that process, and upon the results of measurements of the vibrations of telephone discs made for the purpose of determining approximately the loss of power between the transmitting and receiving telephones. These experiments, the results of which had been embodied in a paper read before the British Society of Telegraph Engineers in London in 1878, consisted in connecting two hand telephones, similar to those at present in general use, by means of flexible wires, and recording the excursions of the discs of both the transmitting and receiving telephones by means of fine platinum wires tracing upon smoked glass. The excursion of the transmitting telephone disc without the magnet was first recorded, and the average for all the readings for a constant tone of 448 v. s., measured under the microscope with micrometer eye-piece, was 0.2625 millimetre. The deflection of the center of the disc under magnetic attraction was 0.061 millimetre, the result of this being a decrease of the excursion in response to the same tone to 0.180 millimetre, a difference in the length of the excursion of 0.0725 millimetre, or about 27.65 per cent.

Under the condition of fatigue, of relaxation, the ear became peculiarly susceptible to the shock imparted by such sharp metallic sounds as were constantly apt to occur in the practical use of the telephone from sudden variation in current and the breaking of connections, the danger to the ear, already impaired in its accommodative power by a middle-ear disease, being both from the tax upon its enfeebled accommodation and from the sudden shock of sounds to the ear, for protection from which there could be no voluntary preparation, the danger to the ear being always greater from such forms of receiving telephones as were attached to the head, and a proper precaution being that the telephone should be held at a short distance from the ear or at an angle of about forty-five degrees in front of it.

Later experiments had been made by Professor W. W. Jaques, who had arrived at very similar results. The author concluded by saying that these facts so amply confirmed the previous statements that they should be well borne in mind, especially since the telephone was an instrument the use of which would in the future increase rather than diminish; and since it was, moreover, not likely with our present knowledge to be essentially improved, the principal gains in clearness and distinctness of sound transmitted having to come from improve-

ments in the means of communication rather than from changes made in the receiving instrument itself, all attempts at dampening the high metallic over-tones and improving the qualitative distinction between the consonant sounds by changing the structure of the receiving telephone having resulted in a corresponding loss of that intensity of which, as had been shown, there was so little to spare.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Special Meeting held at Washington, September 19, 1888.

Dr. HENRY W. WILLIAMS, of Boston, in the Chair.

Tenotomy for the Correction of Heterophoria, with Results.—A paper on this subject was read by Dr. DAVID WEBSTER, of New York. Fifty-seven operations had been done on forty patients. A slight over-correction had been aimed at, and mostly obtained. The tendon was divided from the center each way, and always completely divided just at its insertion. Of four epileptics, none had been cured, though two were thought to have been somewhat benefited. Of two cases of chorea, both had been benefited. In three hysterical cases strikingly good results had been obtained. Most of the operations had been done for muscular asthenopia. The author had reached the conclusions that tenotomy should not be done for heterophoria causing no inconvenience; very slight degrees might require tenotomy; but all other methods of treatment should be tried first. It should be performed under the influence of cocaine, and the eyes tested from time to time, to determine when a sufficient effect had been produced. In judiciously selected cases the results had been quite as good as those obtained with most other surgical procedures. Dr. H. D. Noyes had found apparent vertical deviations of the visual axes to be due to asymmetrical development of the bones of the face and orbit; and that in these deviations both prisms and tenotomy had failed to give an ultimately satisfactory result. He would never do a tenotomy for muscular insufficiency unless the muscle to be divided showed a distinct surplus of power.

Is Astigmatism a Factor in the Causation of Glaucoma? was the subject of a paper by Dr. S. THEOBALD, of Baltimore. He was convinced that, when the meridian of lowest refraction was vertical or nearly so, there was more asthenopia, headache, and likelihood of pathological changes in the eye than when that meridian was horizontal or nearly so. This variety of astigmatism the author had found associated with glaucoma, and, as it was the rarer kind, he thought the association not accidental. It would act through hyperæmia of the ciliary muscle, producing an undue flow of fluid into the vitreous, when, if the anterior drainage apparatus was inadequate, glaucoma would be apt to result. Cases were given of glaucoma with this kind of astigmatism, and of this kind of astigmatism with symptoms of threatened glaucoma.

The Treatment of Ulcers of the Cornea was the title of a paper by Dr. P. A. CALLAN, of New York. The ulcers occurred in young persons, and were often phlyctenulæ of the cornea, in which neglect and lid friction had caused absorption and an ulcer. A salve of the yellow oxide of mercury should be placed between the lids once daily; atropine and cocaine should be used, if necessary, also tonics and open-air exercise, regulated diet and airy sleeping quarters, smoked glasses, but no bandages or dark room. For ulcers due to conjunctivitis, that affection should be treated. In gonorrhœal ophthalmia, ophthalmia neonatorum, or granular conjunctivitis, we should redouble our efforts when the cornea was threatened; cutting the canthus, applying leeches or ice compresses, etc. Referring especially to ulcers without apparent cause, due to some constitutional

trouble—malaria, syphilis, etc.—the author said that the constitutional remedy should be employed, and, under cocaine, the ulcer cleansed with a piece of absorbent cotton wrapped on a holder. Then, with another piece of absorbent cotton, it should be swabbed with a two-grain solution of nitrate of silver, leaving no part of the ulcer untouched. This might have to be repeated two or three times in as many days. The eye should be bathed with hot water (120° to 130° F.), half an hour, three times daily. If much corneal irritation existed, it should be bathed with a boric-acid solution; then atropine and cocaine used, and the eye kept bandaged. The point was to get a clean wound, and this was obtained better and more safely by use of the nitrate-of-silver solution than by any other means known to him. Besides clearing the ulcer, it stimulated repair.

Dr. W. F. MITTENDORF, of New York, thought the electro-cautery should be used on sluggish ulcers and on those inclined to spread rapidly with sloughing edges.

Meridional Astigmatism was the name proposed by Dr. EDWARD JACKSON, of Philadelphia, to designate that kind of "normal irregular astigmatism" which consisted in a difference between the refraction at the center of the pupil and that at the margin. For practical purposes it was to be studied by skiascopy, the shadow-test. There were two forms: a positive, the most common, in which (as in spherical aberration) the center of the pupil was more hyperopic or less myopic than the margin; and a negative, rarer, form, in which the margin was the more hyperopic or less myopic. The latter occurred in conical cornea and incipient nuclear cataract. The practical importance of the defect lay in its liability to lower the acuteness of vision in some cases when it encroached on the contracted pupil, the uncertainty it caused in determinations of myopia or hyperopia made with the pupil dilated, and the need for a correcting lens when the pupil was contracted different from that required when it was somewhat dilated.

The Numbering of Prisms according to their Refractive Power.—The committee, consisting of Dr. Jackson, Dr. Burnett, and Dr. Noyes, appointed to consider this subject, made a report recommending the indorsement of the following propositions: 1. Prisms ought to be designated by the number of degrees of "minimum deviation" they produce. 2. Where intervals of less than one degree are desired, half-degrees and quarter-degrees should be used. 3. To indicate that degrees of deviation are meant, the letter d. should be added. Thus, prism 2° d. will indicate a prism producing a minimum deviation of two degrees.

An Instrument for demonstrating the Laws of Refraction was exhibited and explained by Dr. J. OSCROFT TANSLEY, of New York. It consisted of a box with glass sides, fitted with lenses and screens, which was to be filled with smoke, and then have the light from a magic lantern thrown into it, the course of the rays as refracted by the different lenses being rendered visible by the smoke.

Acute Cocaine Conjunctivitis.—Dr. W. F. MITTENDORF, of New York, reported three cases occurring in his own practice in which the use of a four-per-cent. solution of cocaine had caused severe conjunctivitis, with great swelling of the lids, which were quite shiny, and a profuse, extremely irritating discharge. Two of the patients were elderly ladies, who were unrelieved by any treatment until the use of the cocaine was stopped, and in one of them a second attack was caused by resuming the use of the drug. The third was a man who had three successive attacks from the application of different samples of the drug. It was not remarkable that there should occasionally be found an idiosyncrasy against this as against other drugs. The probable explanation was that cocaine had a paralyzing effect on the sympathetic nerve fibers of the part.

An Apparatus for the Diagnosis of Refraction.—Dr. SWAN M. BURNETT, of Washington, exhibited the Javal ophthalmometer, and a disc of lenses for use in the shadow-test. The latter was arranged so that it could be used at any desired height, and would swing entirely out of the way when not in use.

Blepharospasm.—Dr. CARL KOLLER, of New York, read a paper on this, which he regarded rather as a symptom than a disease. Cases might be grouped under three heads, viz.: The neurotic, the hysterical, and those due to reflex irritation of the corneal and conjunctival nerve endings. In these latter cases, which were the special subject of the paper, cocaine, even when applied freely, gave relief for only a short time. An important factor was a fissure that was formed by the action of the tears near one canthus, usually the outer. The spasm resembled that of fissure of the anus. It could be relieved by cutting the canthus, but this was not usually necessary. Commonly it was enough to treat the accompanying corneal or conjunctival trouble, to cauterize the fissure with copper sulphate, and to apply an ointment of the yellow oxide of mercury to the lids.

Uni-ocular Neuro-retinitis.—Dr. R. H. DERBY, of New York, reported a case in a girl whose father had had syphilis, but who had no other manifestation of a constitutional taint. She had first a central scotoma, then an optic neuritis. The swelling of the papilla amounted to 7 D. and all perception of light was lost. But under mercurial inunctions and large doses of potassium iodide the swelling diminished and vision equal $\frac{7}{10}$ was recovered.

Extraction of the Luxated Lens by Means of Agnew's Bident.—Dr. OREN D. POMEROY, of New York, reported five cases with satisfactory results, securing good vision. By keeping the head bent forward the lens was brought into the anterior chamber, and the bident introduced before placing the patient in position for the extraction. The extraction must be accomplished with a sharp hook or lens-scoop, and care must be taken not to have the lens crowded too closely against the cornea.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of September 12, 1888.

The President, Dr. J. SOLIS-COHEN, in the Chair.

Syphilis of the Larynx, Trachea, and Bronchi.—The PRESIDENT read the following paper:

Syphilitic processes are among the most important morbid processes affecting the larynx and trachea. Not only do they injure the structural integrity of the organs directly, but, by their location in the regions occupied by the origin and course of nerve supply, they lead to denutrition of the tissues generally and to serious motor impairments of the muscles of the larynx. So varied are the manifestations of syphilis, and so important to the welfare of the patient is their timely recognition, that considerable detail is proper in their elucidation. In hardly any other department of living pathology has the laryngoscope been of more signal service than in dispelling obscurities in the conception and comprehension of syphilitic disease of the larynx.

The distinctions between secondary and tertiary syphilis, as manifested in the upper air-passages, are so irregular and uncertain that many writers prefer the terms recent and tardy. In fact, however, secondary lesions are sometimes tardy and tertiary lesions sometimes precocious. Secondary lesions are sometimes present as the sole manifestation of that period. Sometimes they precede cutaneous manifestations. Most frequently they occur in subjects already affected with what are known as mucous patches in other portions of mucous membrane or with early cutaneous syphilides.

Pathology.—The earliest and far most frequent manifestations are subacute and diffusely hyperæmic conditions of portions of the mucous membrane of varied extent and intensity, an erythema with turgescence, but without supersecretion, occurring within from six to ten weeks after infection. The affected surface exhibits at first the usual rose-color of congestion, but, as stases, infiltrations, and hæmic transudations occur, it becomes more or less livid in patches which present mottled or flaky discolorations. Superficial erosions often ensue. Occasionally deep-seated ulceration occurs. Sometimes paresis of the muscles of the larynx is produced. The erosions may be due simply to denutrition of epithelium from mere pressure by infiltrations, or to disintegration of a characteristic proliferative lesion known as the papule or mucous patch, by some termed broad condyloma, a product, according to Virchow, of the same histological character as the indurated chancre and the various gummatous formations—namely, an infiltration of tissue with nucleated embryonic cells. These papules are characteristic but by no means frequent syphilitic products in the larynx, and are so infrequent in the trachea that their occurrence there is denied by authorities the very highest. They are multiple recurrent lesions, almost invariably associated with mucous patches on other mucous membranes; usually lasting from three to five weeks, and sometimes much longer. They are observed from within a few weeks to a few months after infection; sometimes earlier, occasionally as late as eighteen months. They are far the more frequent in tuberculous subjects who have contracted syphilis.

The opinion is held by some that superficial ulceration is always due to their disintegration, and that they must have existed in many cases in which they have not been observed. Histologically they are composed of small-celled infiltrations into the corium and into dilated hypertrophied papillæ. Hence they occur in localities where papillæ exist. Consequently they can not occur below the vocal bands. They are quite red when recent, but soon change to light gray as the epithelium thickens; they then appear as small, wrinkled, opalescent, flattish, ovoidal elevations, varying in size from pin-heads to small peas; depressed in the center when mature, and when recent circumscribed with a peripheric inflammatory areola. They may subside without trace. When erosion takes place, the surface becomes punctatedly red from exposure of the papillæ. They may undergo destructive ulceration. They may become the starting-points of small pointed vegetations histologically identical with papillomata. These are probably non-specific in character, though due to irritation excited by specific processes. They do not undergo ulceration, and rarely undergo absorption under specific medication. When forcibly removed, they repullulate quickly. Similar vegetations sometimes project from the edges of ulcerated patches of tissue. Though usually small, sessile, and multiple, they may acquire such bulk as to interfere seriously with respiration.

The erosions which occur on the surface of the papules or upon simply erythematous mucous membrane are usually superficial, but may extend through the mucous membrane and beneath it, under bad hygienic conditions. Under slight provocative exposures to cold and wet, fluxionary œdema sometimes takes place in their vicinity, occasionally to such an extent as to be menacing to life. The epiglottis often becomes very much thickened; the vocal bands thickened and dentately eroded. There seems to be no tendency for secondary lesions to extend from the larynx to the trachea.

Tertiary lesions come under notice most frequently in the stage of ulceration, usually following the liquefaction of gummatous nodules, gummatous infiltrations, or true gummata, as may be. The epiglottis is the most frequent seat—so frequently

that its lingual and lateral ulceration has been erroneously deemed pathognomonic of syphilis; but destructive lesions may occur in every portion of the larynx. The ulceration is both serpiginous and deep-seated, and, while more commonly unilateral, there seems practically to be little limit to its phagedenic destructive ravages under unfavorable conditions, as it destroys and penetrates all the tissues, soft and cartilaginous. Slight provocation may produce fluxionary œdema in this stage also, which may be of the most serious character. Serious hæmorrhages may occur from penetration of blood-vessels; and apnoea may ensue from incarceration of fragments of necrosed cartilages and soft tissues. Ulceration may be attended with proliferative vegetations which may occlude the air-passages. Superficial ulceration may heal with moderate cicatrization which eventually becomes hardly noticeable. Deep and extensive ulcerations heal under peculiar whitish, lustrous, stellate, retractile cicatrices, similar to those which follow burns. Instead of cicatrization, adhesions may take place between contiguous raw surfaces, and strictures of various kinds be formed in consequence.

The gummatous lesions preceding these ulcerations are of three kinds: Small gummatous multiple nodules or nodular syphilides; diffuse gummatous infiltration; and gummata proper usually isolated.

Small gummatous nodules (nodular syphilide, Lewin) vary in size from that of small bird-shot to that of peas, and are usually grouped in well defined determinate figures in the body of the mucous membrane, and often so contiguous as to appear confluent. Gummata proper present themselves as firm hemispherical nodules or tumors, from the size of peas to that of cherries or almonds, and sometimes much larger, in the connective tissue beneath the mucous membrane; usually uniform in outline, sometimes lobulated; undiscolored or reddish at the base and yellowish at the summit. Gummatous infiltrations present themselves as more or less longitudinal or more diffuse submucous thickenings corrugating the surface of the mucous membrane. All these products may undergo absorption.

When not absorbed, gummatous nodules undergo purulent liquefaction. At this time they become softer and more yellowish at the summit, the mucous membrane at the base becoming more inflamed and thickened, the whole mass looking not unlike a furuncle. The summit becomes perforated, and gives exit to thickened, yellow pus, with granular admixture of débris at first. The orifice rapidly enlarges by ulceration until it becomes fully as large in circumference as the nodule was, or larger; and readily coalesces with ulcerations from contiguous nodules. The ulceration extends in depth until it occupies the entire volume of the nodules, and then may penetrate all the tissues beneath, even to the perichondrium and cartilage.

The ulceration of the nodulous syphilide, as studied in a series of cases by Lewin, is said to take place more from periphery to center than the reverse, being shallow at first, and then gradually deepening. The ulcer is round, depressed, and sharply bordered. Its bed is covered with a secretion which, from previous fatty degeneration or purulent metamorphosis, is either thickish, or nearly lardaceous, or composed of purulent detritus.

The more longitudinal and the more diffuse gummatous infiltrations undergo liquefactive ulceration much more slowly; but the subsequent ulceration, when unchecked, extends much more rapidly and becomes more readily serpiginous and phagedenic; so that, coalescing with similar conditions in the vicinity, large surfaces in continuity become involved in its ravages. As it extends in superficies it penetrates slowly in depth until it also involves the deeper structures close to the perichondrium, and sometimes to the cartilage. Ulceration varies in rapidity,

extent, and penetration, according to the succulence or resistance of the tissues contiguous. The ulceration from diffuse gummatous infiltration is preceded, according to Lewin, by extensive fatty degeneration of its surface, which gives it an almost grayish-white tinge. This is soon followed by actual defects which, at first shallow, increase in depth, and gradually penetrate to the perichondrium and the cartilage. These ulcers are characterized, like those from the nodules, by sharp definite circumscription, and by their being surrounded with an inflammatory swollen zone. They appear often as though a piece of swollen tissue had been cut out. The edges are often beset with slight crenations, which give them a gnawed appearance, but are never undermined; and their bottom is covered with a yellowish-white adherent mass, composed of pus, fatty detritus, and shreds of tissue. Gummata proper sometimes remain unchanged for prolonged periods. When they undergo degenerative metamorphosis there is formed, according to Lewin, only the characteristic viscid fluid, suppuration being exceptional. Ulceration takes place, however, in some instances, and penetrates deeply into the tissues beneath, as in the other two forms. Under unfavorable hygienic conditions of system, or of surroundings, the phagedenic ravages may become uncontrollable. They have been known to attack an artificial opening made to prevent suffocation by a gumma (Holden, "New York Medical Journal," January 29, 1887).

Perichondritis and chondritis being set up after either form, the ulceration may penetrate the cartilage to the tissues external, forming a perichondrial abscess, which ruptures externally by a more or less circuitous route, whence the fragments of dead tissues are discharged.

Taken in point of frequency, the cartilaginous structures seem to be vulnerable in the order following: epiglottis, posterior vocal processes, ary-tænoids, supra-ary-tænoids, cricoid, cuneiform, and thyreoid. Coming to the softer parts, the vocal bands are attacked next in frequency to the epiglottis, the left band far more frequently than the right; the interior supraglottic walls of the larynx, the ary-epiglottic folds, the interary-tænoid fold, the posterior wall, the ventricular bands, the subglottic walls of the larynx, the exterior of the soft parts in the pyriform sinus. When the cartilages are attacked, whether primitively or consecutively, the chain of morbid phenomena is perichondritis, chondritis, calcification, caries, necrosis, and elimination of sequestra in crumbled masses and in fragments. The elimination of dead cartilages may consume months, and even years. It usually takes place by the interior route, occasionally by the exterior. In both instances abscess and fistula are formed, and elimination of large fragments by the interior route sometimes produces suffocative paroxysms, and occasionally actual suffocation.

The epiglottis, as repeatedly noted, is especially vulnerable to the syphilitic process, and every variety of lesion possible may ensue in any extent, from insignificant erosion to complete destruction, the character of the lesion depending upon that of the structure destroyed. It is this, as pointed out by Seiler, which gives such an irregular conformation to the epiglottis when its glands have been destroyed. Exulceration of the entire mucous membrane at the edge reveals the exposed cartilaginous structure as a yellowish-white stripe imbedded between two thickened masses of spongy-looking tissue. Ulceration of the cartilage often commences at the anterior surface in the form of a round ulcer with thickened excavated edges. Destructive ulceration usually progresses from the side and from the edge. When the valve is only partially destroyed, its remains may present two or more irregular fragments separated by fissures of varying depth, or a single fragment of any breadth, from a small stripe to nearly the entire bulk.

When totally destroyed, the orifice of the larynx is separated from the post-lingual sulcus by a more or less irregular ridge of ulcerated tissue, which, after cicatrization, presents itself as a pale, deformed stump. This, however, does not, as a rule, prevent deglutition, and in some instances does not even interfere with it, the occlusion of the larynx being effected by the base of the tongue on the one hand, and by close approximation of the ventricular bands and sphincter-like approximation of the ary-epiglottic folds on the other.

The other cartilages, when the subject of destructive progressive ulceration, are macerated out of their investments, as it were. The ulcerative process extends into the cartilage, surrounding it, if it is a small one, or circumscribing a portion of it, if it is a large one. The cartilage then perishes by necrosis, is laid bare, and becomes detached from its connections, in some instances remaining entangled in a sort of pocket scooped out of the soft tissues. The necrosed cartilage finally breaks through to the interior, and is usually discharged by expectoration. If it is situated below the glottis, paroxysms of suffocation may ensue, or even actual apnoea, as from any other foreign body. Exfoliations of the cricoid cartilage are the most frequent source of these untoward results, which, however, sometimes ensue from exfoliations of the thyreoid. The ulcerative process sometimes penetrates blood-vessels, and hæmorrhage follows. Such hæmorrhage has been known to terminate fatally (Turck).

The vocal bands frequently sustain permanent lesion varying from minute losses of substance to entire destruction. Transverse dentated erosion of the border is not uncommon, and detachment from the posterior vocal processes not infrequent. Sometimes abundant irregular papillary proliferations take place, forming mobile, projecting, pyramidal, or irregular denritic vegetations, which project like soft, mobile stalactites into the interior, and which are large enough, in exceptional instances, to demand operative interference. Similar conditions and productions may prevail with the ventricular bands. Superficial ulcerations may heal with moderate cicatrization, which eventually becomes hardly noticeable. In deep and extensive ulcerations, when cicatrization occurs, a peculiar lustrous, whitish, stellate, contractile cicatrix is formed, similar to the syphilitic cicatrix in other mucous membranes. Instead of cicatrization, adhesions often take place between ulcerated surfaces, and thus a variety of injurious morbid conditions occur. The vocal bands may become united by a broad fibrinous band stretching between them, or by a similar obturator formed of their thickened and distended mucous membrane. The membranous web thus formed between the vocal bands usually unites them for a variable distance, commencing at the commissure, the posterior border of the structure being crescentic in outline. Exceptionally the cords may become involved throughout their entire length, with an orifice in the central portion of the web (Navratil). This membranous union has been known to take place in six days (Rossbach, Langenbeck's "Archiv," vol. xiv). In a case watched by Sommerbrodt ("Berlin. klin. Woch.," April 1, 1878) the anterior third united in fourteen days, and the union of the bands was complete in six weeks. In other cases the vocal bands become united without any membrane intervening. Other adhesions sometimes take place, which may seriously impair deglutition, phonation, and even respiration. These comprise depression of the epiglottis to one side or the other, or to an ary-epiglottic fold, and preventing proper closure of the valve or complete elevation; adhesion of the epiglottis to either lateral pharyngeal wall; adhesion of ventricular to vocal band, sometimes preventing closure of the glottis, and often producing a shrill, weak, piping voice; adhesions anteriorly of the two vocal bands or of the two ventricular bands; adhesions of the inner surfaces of the mucous membrane of the ary-tænoid carti-

lages, so as to fix the vocal bands immovably in the median position. Other results of syphilitic laryngitis are hypertrophies, diffuse and discrete, of mucous membrane, connective tissue, or muscular substance, and consequent stricture, varying in extent, locality, and interference with function; myopathic paralysis; muscular atrophy; and the development of morbid growths.

Perichondritis or chondritis, whether following ulcerative destruction of the soft tissues or preceding it, usually excites considerable fibrinous infiltration into the adjacent submucous connective tissue, producing a chronic fibrinous oedema. When extensive, this produces suffocative symptoms, and may threaten asphyxia. Sometimes the submucous infiltrations become organized and transformed into dense fibrous tissue incapable of undergoing absorption, and thus they produce deformity, occlusion of the larynx, and stricture. The strictures are often incapable of yielding to systematic dilatation, even when instituted early; and hence tracheotomy is usually necessary to provide artificial means for respiration below the seat of obstruction. After tracheotomy, the process may progress to complete obliteration. These strictures are of the most varying form and caliber, some of them distorting the configuration of the interior of the larynx almost beyond recognition. Fortunately, most of them occur in the supraglottic region, where they are far more accessible to effective treatment.

Lesions of either soft tissues or cartilage in the neighborhood of the important crico-arytænoid articulation excite non-specific inflammation of the joint which may produce true or false ankylosis. Syphilis is probably the most frequent cause of this lesion. When the specific process invades the joint, the ligaments and perichondrium suffer, and true ankylosis, or luxation, or disarticulation, and even discharge of the arytenoid and supra-arytænoid cartilages, may ensue. In the latter stage of unrestrained lesion the cachexia is much the same as in analogous advanced stages of tuberculosis.

Myopathic paralyses of the muscles of the larynx may occur in the later periods of secondary syphilis, and at any period of tertiary syphilis. They are most frequently unilateral, the left side being affected far oftener than the right. The onset is often sudden or acute, following severe or sudden exposure to cold and dampness. The paralysis often affects the dilator muscles, and bilateral paralysis of the dilators is not infrequent. Paralyses of the arytenoid muscle and of the entire constrictor group are the most frequent varieties. These paralyses differ in their pathological origin from other examples of paralysis in syphilis which are due, respectively, to compression of the tract of the nerve-supply by diseased tracheo-bronchial glands or other structures, and to neural or cerebral lesions which present themselves in the latter stages of the confirmed dyscrasia.

Tertiary lesions of the trachea are first observed so very frequently in the stage of ulceration that it has been assumed that tertiary syphilis of the trachea always produces ulceration (Vierling). Schech and others have reported instances of resorption of gummata under specific medication. The clinical tendency, however, is to ulceration. Tracheal ulcerative lesions are sometimes unassociated with lesions elsewhere in the aerial tract. Much more commonly they are found associated with similar lesions in the larynx, in the bronchi, or in both.

Pharyngeal syphilis exists in many instances (thirty out of forty-six collated by Vierling), and pulmonary syphilis in not a few (six out of fifty, Schech). They are often found associated with additional syphilitic lesions at a distance. In a large proportion of instances a primitive bronchus is affected, the left one the more frequently; in some, both primitive bronchi; in a few, the smaller ramifications (Vierling); and, exceptionally, even the minutest (Lancereaux). In some instances syphilitic

lesion is confined to the bronchi (five cases by Vierling). The upper portion of the trachea suffers most when the larynx is involved; the lower portion, when the disease is isolated or associated with syphilis of the bronchi. In some instances the middle portion alone suffers (Vigla and Charnal, Berger, Mackenzie of Baltimore, Semon); exceptionally, the two extremities, with complete conservation of the middle portion (Tessier, cited by Rey).

When not occurring in direct continuity with similar lesion in the larynx, the most frequent seat of ulceration is in the anterior surface of the lower portion of the trachea just above the bifurcation, whence it extends upward, or in patches continuously sometimes as far as the cricoid cartilage; sometimes almost completely around the interior in periphery, occasionally completely around. Multiple perichondritis is easily set up and results in abscess, denudation of cartilage, calcification, caries, and necrosis. Portions of dead cartilage are sometimes coughed up in fragments. Sometimes semi-detached portions project into the interior and interfere seriously with respiration and with expectoration. The ulceration usually begins in a number of small ulcers which extend in depth and in periphery, baring the perichondrium, and causing portions of the cartilaginous rings, or entire rings, to undergo denudation, necrosis, and exfoliation. Coalescence with similar ulcerating surfaces or phagedenic extension sometimes produces very extensive ravages which may involve nearly the entire circumference of the trachea, and nearly, occasionally quite, its entire length. Flaps of detached membrane sometimes fall over, producing valvular impediments to inspiration, or to expiration, according to the position of the attachments. The cicatrization of annular ulcerations produces stricture often so low down as to be beyond relief even from tracheotomy, the parts not being well adapted to respond to artificial dilatation. The strictures are irregularly ovoidal in shape, sometimes funnel-shaped, and of varying thickness, from a few lines to that of several rings. These cicatrices may reduce the caliber of the trachea so considerably as to prevent respiration. Occlusion to the caliber of a crow-quill is not uncommon, and still greater occlusion has been noted in some instances. Annular stricture at the bifurcation may become so great as barely to admit the passage of a delicate probe (Obtulowicz, "Otrbl. f. Chir.," 1879, No. 7). Irregular annular dilatation of the trachea is often produced by the pressure of the air-current above the stricture and sometimes below it. Even dilatation of the bronchi has been noticed. Projecting ridges of cicatricial tissue below the point of stricture are sometimes so located as to occlude the inferior orifice of a tracheal cannula more or less, a point not sufficiently recognized, for it might be practicable in some instances to push a cannula into a position which would allow its inferior extremity to pass the obstruction.

Stricture of the bronchi is rare. It affects the left bronchus more frequently (Verneuil *et al.*); sometimes the right one (Wilks *et al.*); occasionally both (Virchow *et al.*). The connective tissue around the strictured portions usually undergoes permanent sclerotic proliferation. Sometimes there is great peritracheal sclerosis, sometimes none. The peritracheal glands may undergo great enlargement. All these conditions, superadded to the internal stricture, may greatly increase stenosis.

Ulceration sometimes penetrates through the trachea, producing abscess opening into the œsophagus or the mediastinum, the aorta (Rokitansky, "Path. An.," Bd. 111, p. 22; Wilks, "Trans. of the Path. Soc. of London," 1865, p. 52), the pulmonary artery (Kelly, *id.*, 1872, p. 45), or the vena cava (Turner, *id.*, xxxvii, p. 117). In at least two instances of ulceration of the left bronchus the left branch of the pulmonary artery has been found perforated (Vierling).

Inflammation around the trachea or bronchi sometimes produces adhesions to the œsophagus or to other tissues, which depresses the trachea and larynx and impairs their upward movements in deglutition. Sometimes it produces peritracheal or tracheo-bronchial abscess. Abscess of a bronchus, sometimes deeply seated, has occurred after tracheotomy, apparently as a result of too assiduous swabbing of the cannula.

The lesions of hereditary syphilis are almost identical with those of the gummatous infiltrations of tertiary syphilis. They sometimes appear very early. Ulcerations have been noticed in infants at two months of age (Parrot, "Prog. méd.," 1878, p. 653). Stricture from perichondritis has been noticed at the same age (Fränkel, "Wien. med. Woch.," 1868, No. 18; Parrot, *loc. cit.*).

(To be concluded.)

Book Notices.

Nature's Hygiene: a Systematic Manual of Natural Hygiene, containing a Detailed Account of the Chemistry and Hygiene of Eucalyptus, Pine, and Camphor Forests, and Industries connected therewith. By C. T. KINGZETT, F.I.C., F.C.S., Past Vice-President, Society of Public Analysts, etc. Third Edition. London: Baillière, Tindall, & Cox, 1888. Pp. xii-439.

THE thinly veiled purpose of this large volume is to vaunt the antiseptic and disinfectant virtues of peroxide of hydrogen in particular connection with the "Sanitas" compounds invented by the author; but, as might be expected from a chemist of such high repute, the argument which underlies the advertisement possesses scientific interest and value.

A careful review of the present position of the "germ theory" leads Mr. Kingzett to the opinion that the causes of infectious disease are to be sought in the chemical products to which certain micro-organisms can give rise in suitable media, and he intimates that, on the one hand, "a number of different organisms are capable of producing the same disease by the like production of the same chemical product," and, on the other hand, "since these products may vary with the nature of the media in which they are produced, we may expect to find different diseases or modifications of the same disease induced by one and the same micro-organism acting under different conditions." From this point of view it is an easy step to the conclusion that an antiseptic agent, by sterilizing the medium or by neutralizing the poisonous product, is as efficient as a "germicidal" disinfectant—a conclusion to some extent supported by practical sanitary experience, despite the contradictory laboratory experiments of bacteriologists.

Having pointed out that the so-called ozonometric tests are, as has long been known, rather measures of peroxide of hydrogen, the author demonstrates that the pure terpenes and many of the essential oils yield peroxide of hydrogen in large amount when their oxidized products are treated with water, and that such is especially the case with the pine, eucalyptus, and camphor, a consideration of the properties of which occupies nearly half the book.

GENERAL LITERARY NOTES.

AMONG recent foreign publications we note the following:

F. ALCAN, Paris.—Malgaigne, "Manuel de médecine opératoire." 9th ed., ed. by L. Le Fort. (16fr.) — A. and G. Bouchardat, "Formulaire magistral." (4fr.) — F. Lagrange, "Physiologie des exercices du corps." (6fr.)

P. ALCAN, Paris.—C. Sabourin, "Recherches sur l'anatomie normale et pathologique de la glande biliaire de l'homme." (8fr.)

ASSELIN & HOUZEAU, Paris.—Tillaux, "Traité de chirurgie clinique." Vol. ii, part 1. (6fr.)

J. B. BAILLIÈRE & FILS, Paris.—Després, "La chirurgie journalière." (12fr.) — F. Guyon, "Leçons cliniques sur les affections chirurgicales de la vessie et de la prostate." Ed. by Guiard. (16fr.) — Rafin, "Étude clinique sur le massage appliqué au traitement des fractures juxta-articulaires." (1fr. 50.) — R. Chabannes, "Traitement de la dyspnée par les inhalations d'acide carbonique." (2fr.) — Moreau, "La folie chez les enfants." (3fr. 50.) — Riant, "Les irresponsables devant la justice." (3fr. 50.) — J. Luys, "Petit atlas photographique du système nerveux: le cerveau." (12fr.) — A. Cullerre, "Les frontières de la folie." (3fr. 50.) — H. Bourru and P. Burod, "Variations de la personnalité." (3fr.) — E. Périer, "La seconde enfance." (2fr.) — G. Bouilly, S. Duplay, L. Picqué, E. Schwartz, P. Segond, L. Poisson, A. Pousson, and R. Harrison, "Chirurgie des organes génito-urinaires de l'homme et de la femme." (17fr. 50.) — J. Cyr, "Scènes de la vie médicale." (3fr. 50.) — Bouveret, "Traité de l'empyème." (12fr.) — E. Duval, "Traité pratique et clinique d'hydrothérapie." (10fr.)

O. BERTHIER, Paris.—H. Huchard, "Quand et comment doit-on prescrire la digitale?"

A. DELAHAYE & E. LECROSNIER, Paris.—C. Bataille, "Traumatisme et névropathie." (4fr.) — C. Viry, "Manuel d'hygiène militaire."

O. DOIN, Paris.—G. Patein, "Manuel de physique médicale et pharmacétique." (7fr.) — G. Pichon, "Les maladies de l'esprit." (7fr.) — A. Tripier, "Varices viscérales." — G. Treille, "De l'acclimatation des Européens dans les pays chauds." (2fr.) — Du-jardin-Beaumetz, "L'hygiène thérapeutique." (6fr.) — Joal, "De l'épistaxis génitale."

LECROSNIER & BABÉ, Paris.—Berrez, "De l'ulcère simple de l'œsophage." (2fr. 50.) — J. M. Dupain, "Étude clinique sur le délire religieux." (5fr.)

G. MASSON, Paris.—H. Peyraud, "L'immunité par les vaccins chimiques. Prévention de la rage par le vaccin tanacetique ou le chloral." (2fr. 50.) — A. Gouguenheim and P. Tissier, "Phthisie laryngée." (8fr.) — Verneuil, "Mémoires de chirurgie." Vol. v. (15fr.) — P. Miquel and Rueff, "Traitement de la tuberculose pulmonaire par les pulvérisations biiodo-mercuriques et technique des pulvérisations." (3fr.) — J. Batnaud, "Essai de séméiologie gynécologique. Des troubles gastriques . . . d'origine génitale . . . en dehors de la grossesse."

MEURILLON, Paris.—E. Dupouy, "Le moyen âge médical." (5fr.)

OLLIER-HEURY, Paris.—C. Le Page, "Des résultats éloignés de la cure radicale des hernies épigastriques."

G. STEINHEIL, Paris.—A. Ruault, "De quelques phénomènes névropathiques réflexes d'origine amygdalienne." — J. Besnier, "De la typhlite stercorale."

H. GEORG, Geneva.—J. L. Prévost and P. Binet, "Recherches expérimentales relatives à l'action des médicaments sur la sécrétion biliaire et à leur élimination par cette sécrétion."

J. F. BERGMANN, Wiesbaden.—R. Fleischer, "Lehrbuch der inneren Medicin." Vol. i. (5M. 40.) — M. Knies, "Grundriss der Augenheilkunde." (6M.) — H. Nebel, "Beiträge zur mechanischen Behandlung." (2M.)

C. BURROW, Heidelberg.—F. Langheineken, "Extraktionsmethoden am nachfolgendem Kopf." (0M. 75.)

M. COHEN & SOHN, Bonn.—K. Schröder, "Lehrbuch der Geburtshilfe mit Einschluss der Schwangerschaft und des Wochenbettes." 10th ed., by Olshausen and Veit. (16M.) — O. Witzel, "Allgemeine chirurgische Semiotik und Diagnostik." (3M. 60.)

W. ENGELMANN, Leipsic.—J. N. von Nussbaum, "Ueber Unglücke in der Chirurgie." 2d ed. (0M. 90.)

F. ENKE, Stuttgart.—E. Fröhner, "Lehrbuch der thierärztlichen Arzneimittellehre." Part i. (5M. 40.) — A. Adamkiewicz, "Die degenerativen Krankheiten des Rückenmarks." (7M.)

G. FISCHER, Jena.—O. Hertwig, "Lehrbuch der Entwicklungsgeschichte des Menschen und der Wirbelthiere." 2d ed. (11M.)

G. FOCK, Leipsic.—E. Riese, "Die Seekrankheit." (1M. 50.)

E. GROSSER, Berlin.—A. Baginsky, "Ueber Rückgratsverkrümmungen der Schulkinder." (O.M. 50.)

F. W. GRUNOW, Leipsic.—F. Ahlfeld, "Abwartende Methode oder Credé'scher Handgriff?" (1M.)

L. KRESSNER, Würzburg.—G. Tarrasch, "Die Aetiologie des Uterusprolapses." (1M. 20.)

LIPSIUS & TISCHER, Kiel.—Jacob, "Ueber simulierte Augenkrankheiten." (1M.) — H. Rohwedder, "Der primäre Leberkrebs und sein Verhältniss zur Lebercirrhose." (1M.) — G. Breese, "Ein Beitrag zur Statistik und pathologischen Anatomie der Hirnblutung." (1M.) — A. David, "Beitrag zur Kenntniss der Wirkung des chloresauren Natriums." (O.M. 80.) — J. P. A. Mörcck, "Beitrag zur pathologischen Anatomie der congenitalen Syphilis." (1M.)

E. S. MITTLER & SOHN, Berlin.—E. Leyden, "Die Entzündung der peripheren Nerven." (1M. 20.)

G. NEUENHAHN, Jena.—A. Engelhard, "Zur Diagnose der Ovarientumoren." (1M. 20.)

M. NIEMEYER, Halle.—W. Zopf, "Untersuchungen über Parasiten aus der Gruppe der Mondaminien." (6M.)

P. NOORDHOFF, Groningen.—A. P. Fokker, "Untersuchungen über Heterogenese." Part iii. (3M.)

C. SCHMIDT, Zurich.—T. Gsell-Fels, "Die Bäder und klimatischen Kurorte Deutschlands." Part ii. (6M.)

K. J. TRÜBNER, Strassburg.—J. Schreiber, "Praktische Anleitung zur Behandlung durch Massage und methodische Muskelübung." 3d ed. (8M.)

VEIT & Co., Leipsic.—J. Steiner, "Grundriss der Physiologie des Menschen." (10M.)

F. C. W. VOGEL, Leipsic.—O. Schmiedeberg, "Grundriss der Arzneimittellehre." 2d ed. (6M.)

C. WINTER, Heidelberg.—C. F. W. Krukenberg, "Vergleichende physiologische Studien." 2d series, 5th division, 1st part. (7M.)

E. J. KAROW, Dorpat.—R. Kordes, "Vergleichung der wichtigsten narkotischen Extrakte der russischen Pharmakopöe mit den anderer Pharmakopöen unter besonderer Berücksichtigung des Alkaloidgehaltes." (1M. 20.) — A. Kroeger, "Beiträge zur Pathologie des Rückenmarkes." (1M.) — A. Friedrichson, "Untersuchungen über bestimmte Veränderungen der Netzhautcirculation bei Allgemeinerleiden mit besonderer Berücksichtigung der Blutbeschaffenheit bei Anämie und Chlorose." (2M.) — C. Johansen, "Die Gastrotomie bei carcinomatöser Strikture des Oesophagus." (3M.) — R. von Oettingen, "Ueber Enterostomie und Laparotomie bei akuter innerer Darmocclusion, bedingt durch Volvulus, Strangulation und Inflexion." (1M. 20.) — D. Scherenziss, "Untersuchungen über das fötale Blut im Momente der Geburt." (1M.) — W. Demitsch, "Litterarische Studien über die wichtigsten russischen Volksheilmittel aus dem Pflanzenreiche." (1M. 20.)

C. RICKER, St. Petersburg.—E. Masing, "Die Luft in ihrem Einfluss auf unsere Gesundheit." (1M.)

BOOKS AND PAMPHLETS RECEIVED.

Therapeutics: Its Principles and Practice. By H. C. Wood, M. D., LL. D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. A Work on Medical Agencies, Drugs, and Poisons, with Especial Reference to the Relations between Physiology and Clinical Medicine. The Seventh Edition of a Treatise on Therapeutics, rearranged, rewritten, and enlarged. Philadelphia: J. B. Lippincott Company, 1888. Pp. 16-17 to 908. [Price, \$6.]

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-book specially adapted for Students of Pharmacy and Medicine. By W. Simon, Ph. D., M. D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, etc., Baltimore, Md. Second Edition, thoroughly revised and greatly enlarged. With Forty-four Illustrations and Seven Colored Plates, representing Fifty-six Chemical Reactions. Philadelphia: Lea Brothers & Co., 1888. Pp. xiii-17 to 479. [Price, \$3.25.]

Annual Announcement of Trinity Medical College, Toronto. Session of 1888-'89.

Electricity versus Tait, or the Use of Electricity in Inflammation as found in Gynecology. By George F. Hulbert, M. D., St. Louis. [Reprinted from the "St. Louis Courier of Medicine."]

Transactions of the Medical Society of the State of Pennsylvania at its Thirty-ninth Annual Session, held at Philadelphia, June, 1888. Volume XX. Published by the Society. Pp. 355.

Transactions of the Medical Association of the State of Missouri at its Thirty-first Annual Session, held at Kansas City, Mo., April 17, 1888. Pp. xvi-462.

A Case of Extra-uterine Pregnancy; Embryo destroyed by a Twenty-millampère Current without Interruptions, together with Remarks on the Best Manner of using Electricity for this Purpose. By A. H. Buckmaster, M. D., Brooklyn. [Reprinted from the "Medical News."]

Miscellany.

The Resection of Great Venous Trunks in the Extirpation of Malignant Tumors.—Madelung has been trying the effect of resecting the great venous trunks near malignant tumors when the cancerous disease did not appear to have become generalized, on the ground that the veins with the lymphatics form the road by which cancer extends. Schevan, in his inaugural thesis ("Ctrbl. f. Chir.") reports fifteen cases. In eleven the jugular was resected, once on both sides. Twice there was resection of the common carotid and of the jugular at the same time, eight times for glandular metastatic carcinoma, and three times for lympho-sarcoma. In four other cases the femoral vein was resected, once with resection of the artery, twice for cancerous glands following primary disease of the genitals, once for a tumor of the vagina, and once for primary cancer of the glands. Three patients died as a result of the operation; one of gangrene of the lower extremity and septicaemia following resection of the femoral vein, another as a result of resection of the common carotid and jugular, a third without the cause of death being positively established. Three died of local return, two of exhaustion, and two more of the primary disease, which could not be removed. Two were still alive, though suffering from a fatal return of the disease, and one was cured, though the observation dated only one month after the operation. Two patients were considered as cured; in one, death followed two years after the operation without any return, and the other had lived three years without a return.

Ruptures of the Bladder and their Treatment.—In connection with a successful case of suture of a laceration of the bladder, M. Blum ("Arch. gén. de méd.") gives some instructive statistics. The cases are naturally divided into intraperitoneal and extraperitoneal. Quoting the statistics of Bartels, out of 75 cases of the second class 46 were fatal, while of 94 cases of the first class 93 ended in death. When the rupture is joined with fracture of the pubic bone the prognosis is still worse—130 deaths in 139 cases. The seat of the lesion is variable, being in the intraperitoneal cases almost always posterior, and in extraperitoneal cases generally anterior. In general there is but a single laceration, and this seldom exceeds five centimetres in length, though rarely a double rupture has been seen. The principal symptoms are violent pain in the hypogastrium at the moment of the accident and great desire to urinate, without any result. Catheterism generally results in a few drops of bloody urine only, though in a few cases after several trials escape is afforded to a considerable quantity of urine, either clear or slightly tinged with blood. In these cases the catheter passes through the laceration and into the peritoneal cavity or into the extraperitoneal collection of urine. In extraperitoneal rupture spontaneous recovery is possible, especially if there is an external wound, and if the patient is not carried off by urinary infiltration and inflammatory complications. In intraperitoneal ruptures left to their own course death is the unvarying result, usually ensuing within twenty-four hours and always within the first week. The diagnosis as to the seat of the laceration is often difficult, more especially if there is no external wound. If to the signs al-

ready mentioned there are joined pain all over the abdomen and marked tympanites, the chances are greatly in favor of intraperitoneal rupture. If, on the other hand, there is no tympanites, but if there are marks of urinary infiltration of the abdominal wall, or if a fluctuating tumor above the prostate is made out by rectal touch, the rupture is probably extraperitoneal. In the latter case perineal section and permanent catheterism are absolutely indicated and have given good results. In intraperitoneal rupture all the danger comes from communication between the bladder and the peritonæum, and the treatment is very different. Laparotomy is indicated, and should be done with as little delay as possible, to reveal the size and situation of the rupture, and it should be closed completely by the method of Lembert (the sero-muscular suture not involving the mucous membrane). The toilet of the peritonæum should be made with care. In twelve cases treated in this way there have been five successes, and Blum's makes one more. He was called in a case of this nature forty hours after the accident, and when the signs of commencing peritonitis were unequivocal. Nevertheless, the recovery of his patient supports the bold line of treatment which should be adopted, in which alone there is any hope of success.

Laparotomy for Gunshot Wounds of the Abdominal Viscera.—In the "Transactions of the Medical Association of the State of Missouri" for 1888 Dr. H. C. Dalton, of St. Louis, contributes a case of successful suture of a gunshot wound of the liver. Both the stomach and the liver were injured, the laceration in the latter being through the lower margin of the left lobe at a point an inch and a quarter from the fissure, leaving a V-shaped wound half an inch deep. The two wounds in the stomach were closed by Lembert's sutures, and the one in the liver was closed by a single catgut suture entering and passing out at least an inch from the edges of the laceration on each side. The man, a negro aged twenty-two, made a good recovery. The operation was done immediately after the injury, and lasted two hours. The peritonæum was carefully washed with sterilized water. The patient nearly lost his life by hiccough, which, however, was controlled by hypodermic injections of hyoseyamine, $\frac{1}{120}$ of a grain. The author gives a very detailed and valuable table of all the cases of laparotomy for gunshot wounds of the abdomen that he has been able to collect. It contains MacCormac's cases in full, with the exception of two which he was unable to find; and he has added others which have occurred since. He points out two errors in MacCormac's table, which he has corrected—the cases of Dr. Mudd and Dr. Carson being entered as recoveries, whereas both patients died. The table includes 69 cases with 27 recoveries and 41 deaths, and 1 result not given. Under the old "do-nothing" treatment less than 8 per cent. recovered, and it is probable that in some of the recoveries neither the cavity nor the viscera were penetrated.

A New Method of Mixed Anæsthesia.—Obasmski (Wien. klin. Woch.) advises the following method for producing mixed general and local anæsthesia for surgical operations: The patient is first put under the influence of chloroform for five or ten minutes, and three to five centigrammes of cocaine are then injected into the part to be operated upon. Used in twenty-four cases, this method has been found preferable to either general anæsthesia by chloroform or local anæsthesia by cocaine, because of the smaller quantity of each employed, the rarity of vomiting, and the lessened risk of convulsive excitement in certain neurotic individuals.

The Clinical Society of the New York Post-graduate Medical School and Hospital.—At the opening meeting of the season, to be held this evening in the old amphitheatre of the school, Dr. R. W. Wilcox will read a paper on "Circumscribed Cutaneous Œdema." Thereafter the society's meetings will be held regularly on the first and third Saturdays of each month. Members of the profession are invited to attend.

Mr. Reginald Harrison and Mr. Arthur Durham at Bellevue Hospital.—On Wednesday of last week, at the invitation of Dr. Lewis A. Sayre, Mr. Harrison, of Liverpool, and Mr. Durham, of London, were present in the amphitheatre of Bellevue Hospital, on the occasion of the opening clinic of Dr. Sayre's course for the season.

The hospital staff and the students of the Bellevue Hospital Medical

College were fully represented. Dr. Sayre showed his method of diagnosing and treating a case of incipient hip-joint disease in a male child of seven or eight years. He spoke with his wonted energy and plain-dealing, entertaining manner. Standing the boy upon the table, he called attention to the gluteo-femoral crease being lower and less distinct on the affected right side than on the left, to the eversion or outward rotation of the right foot, and to the impossibility of making inward rotation of the limb. These conditions, he said, marked the first stage of the disease.

Furthermore, the right limb was poorly developed, and its muscles were wasted and flabby. He showed how attempts at flexion of the limb at the hip were fruitless and caused pain and involuntary shrinking. He then put the patient's body into proper position for measurements and examination by laying the boy out flat on the table without pillows, getting the tip of the ensiform cartilage and the symphysis pubis into exact line with the long axis of the table, and the anterior superior spinous processes into a line just at right angles to the first. The feet were kept elevated and were lowered gently without disturbing the position of the trunk till the popliteal regions were in contact with the bed. He showed again that the leg could not be flexed at the hip nor rotated inward without lifting or turning the whole pelvis. Dr. Sayre then proceeded to apply his extension and fixation splint and apparatus, with minute explanations, by which he hoped to elucidate the details of the process. They had never been fully understood in England, and consequently success had not always attended the attempts of English surgeons to use his method. Particular attention was called to the permanent flannel bandage with which the limb was wrapped to above the knee. Upon this the plaster-of-Paris bandage was rolled tightly. The extension apparatus was then applied and fastened, the use and proper position of perineal bands being explained. Adjustment having been completed, Dr. Sayre showed that, while the limb was movable, the hip joint was free from pressure on its articular surfaces and could go on to heal in its own time without the presence of irritation or any forces tending to bring about contracture and distortion. He spoke emphatically of the gain in results which must attend the orthopædic surgeon's being his own instrument-maker and fitter; and to the practice of sending patients off to instrument-makers, which prevailed among surgeons in England, he ascribed in part their non-success in the use of his methods. He would almost as soon have an operation done on his eye by an instrument-maker as on his hip joint.

Mr. Harrison was then introduced. He paid a tribute to Dr. Sayre's high abilities as a scientific worker and to his success in teaching, to which, both in America and in England, the profession were deeply indebted. Having been asked to give some item of interest from his own experience as a surgeon, he would offer some account of his success in dealing with prostatic disease or enlargement, so common in men approaching sixty years or so of age. He did not refer to cases where a moderate degree of enlargement merely made the use of a catheter necessary to empty the bladder, but to a class where the catheter must be used from twenty to thirty times a day, and where the bladder was becoming diseased, the urine thick and putrid, and the whole condition intolerable. Here operative surgery could do a great deal toward securing relief, and in many cases recovery. What that was he wished to tell. Four years ago he had brought before the International Congress at Copenhagen a new operation in this department of surgery, designed to meet two requirements in such cases: 1. The making of a free outlet for the urine. 2. The thorough drainage and washing daily of the diseased mucous membrane. His plan had been to cut directly through the perinæum, so as to split the prostate in two and open the bladder at its most dependent part. To cut through the prostate by merely thrusting a knife inward upon it never more than shaved off a corner of it. He put a grooved staff into the urethra, and then, thrusting a bistoury in through the perinæum till it reached the groove in the staff at the outlet of the bladder, he cut the prostate completely through from behind forward. The after-treatment was important. He used very large gum-elastic drainage-tubes, several times as thick as the largest used by the surgical staff of Bellevue, so that by their bulk they distended the sides of the opening. He changed them very often and washed out the bladder with proper solutions, keeping this up for seven or eight weeks, or till the urine came away clear and

of distinctly acid reaction. After that the wound usually closed up completely. As for final results, in the majority of cases relief was complete and permanent. The prostate underwent a slow atrophy and the urine came away by the natural passage. Where full recovery was not attained, a certain number of patients still had to use the catheter, though relieved of the rest of their bad symptoms. In a few cases the urethra could not be restored to patency, and the patient continued to pass his urine through the rent in the perinæum. He concluded with an invitation to any who might have listened to him to visit him and his hospital in Liverpool.

Mr. Durham, whose recent address before the Congress of American Physicians and Surgeons at Washington called out so much good feeling, then came forward. He spoke with much eloquence, in a striking manner, at once winning and energetic, not unlike that of the Rev. Dr. Tallmage, to whom, except for the English accent, he has some resemblance in appearance and voice also, it is said. He remarked that it was just eleven years since Dr. Sayre had opened his (Mr. Durham's) clinic in Guy's Hospital, where he had shown his method of making a plaster-of-Paris jacket for the cure of spinal curvature. It had been in use in Guy's Hospital from that day to this. The rules for using it were printed and pasted upon the walls under the title "Sayre's Rules." In a city like London, containing so many thousands of the poorest working people, he could not sufficiently estimate the aid which the plaster jacket had given surgeons. With the poor classes that they largely had to deal with, it was folly to tell them they must have the child lie quietly for six months on a bed, or that they must buy a costly and troublesome apparatus, to cure a spinal curvature. Now it was done cheaply and most efficiently, thanks to Dr. Sayre, and the patient could go about freely meanwhile.

He spoke of the Johns Hopkins Hospital, which he had lately visited in Baltimore, of its magnificent equipments, of the engineering and sanitary skill embodied in its plans and construction, and of the life of its founder, who, like the founder of Guy's Hospital, had risen by his own labor and shrewdness from an humble walk in life to be the benefactor of thousands. He would offer from his own surgical experience some account of an operation which he wanted to make a familiar one to the whole profession. It was for the extraction of sharp foreign bodies that had been swallowed and become immovably lodged in the pharynx or upper œsophagus. Notwithstanding the immense array of instruments—probangs and forceps and what not—now made for the use of surgeons in these emergencies, they were constantly meeting with cases where either they could not get hold of the foreign body with these instruments, or, if they did, could not remove it without severe and perhaps dangerous lacerations. He had relieved a number of persons who had met with this accident by opening the pharynx from the outside, just behind the angle of the jaw. He showed the curved handle of a crockery pitcher or jug, as large as the middle finger, which he had thus removed from an imbedded position from which no instruments passed down the throat could have removed it without fatal injuries to surrounding blood-vessels and nerves. He related another case where the autopsy had shown a similar state of things. While the patient had been alive he had persistently refused to allow the operation, which might have saved his life, after ordinary measures had failed, saying that "any one could cut his throat."

The North Dakota Hospital for the Insane.—Dr. D. S. Moore has been appointed assistant physician to the hospital.

The Nervine Establishment at Burlington, Vermont.—During the past summer Dr. A. J. Willard, of Burlington, has erected a new building for his Nervine Establishment, and expects to have it ready for patients about the middle of October.

The New York Academy of Medicine.—At the next meeting of the Section in Surgery, on Monday evening, the 8th inst., Dr. John Ridlon will read a paper on "The Early Diagnosis and Rational Treatment of Lateral Curvature of the Spine," to be followed by "Demonstrations of Exercises and Prescriptions adapted to the Varying Conditions," by Claes Enebuski, Ph. D., M. G.

At the next meeting of the Section in Neurology, on Friday evening, the 12th inst., Dr. C. A. Herter will, by invitation, read a paper entitled

"The Therapeutic Usage [*sic*] of Hypnotism"; Dr. W. R. Birdsall will report "A Case of Tremor treated by Hypnotic Suggestion"; a discussion will follow on "The Therapeutic Value of Hypnotism"; and Dr. Osgood Mason will report "Six Cases of Treatment with Animal Magnetism."

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 15th inst., Dr. J. E. Weeks will read a paper entitled "A Case of Epibulbar Echinococcus," and a paper (on a subject to be announced) will be read by Dr. H. Knapp.

At the next meeting of the Section in Theory and Practice of Medicine, on Tuesday evening, the 16th inst., Dr. Landon Carter Gray will read a paper on "Neurasthenia: its Differentiation and Treatment."

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for the month of August, the whole number of deaths was 478, including 1 from cerebro-spinal meningitis, 13 from cholera infantum, 1 from cholera morbus, 19 from croup and diphtheria, 3 from dysentery, 6 from diarrhoea, 3 from erysipelas, 10 from typhoid fever, 2 from malarial fever, 2 from pyæmia, 3 from whooping-cough, and 1 from septicæmia.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending September 28th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending September 8th corresponded to an annual rate of 17·8 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 12·7, and the highest in Norwich, viz., 25·1 in a thousand. Diphtheria caused 2 deaths in Manchester, 2 in Brighton, and 3 in Newcastle-upon-Tyne.

London.—One thousand three hundred and sixteen deaths were registered during the week, including measles, 26; scarlet fever, 19; diphtheria, 18; whooping-cough, 32; enteric fever, 11; diarrhoea and dysentery, 131; simple cholera and choleraic diarrhoea, 3. Diseases of the respiratory organs caused 148 deaths; different forms of violence, 32; and 3 suicides were registered. The deaths from all causes corresponded to an annual rate of 16 in a thousand. In greater London 1,630 deaths were registered, corresponding to an annual rate of 15·4 in a thousand of the population. In the "outer ring" the deaths included diarrhoea, 33; whooping-cough, 5; scarlet fever, 6; and measles, 7.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending September 8th in the sixteen principal town districts of Ireland was 19·5 in a thousand of the population. The lowest rate was recorded in Londonderry, viz., 12·5, and the highest in Armagh, viz., 41·3 in a thousand. In Dublin 147 deaths were registered, including measles, 1; enteric fever, 2; scarlet fever, 2; diarrhoea, 11; whooping-cough, 2; diphtheria, 1; and dysentery, 1.

Scotland.—The deaths registered in eight principal towns during the week ending September 8th corresponded to an annual rate of 16 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 7·4, and the highest in Paisley, viz., 21·9 in a thousand. The aggregate number of deaths registered from all causes was 405, including measles, 8; scarlet fever, 6; diphtheria, 7; whooping-cough, 6; fever, 2; and diarrhoea, 22.

Cardenas, Cuba.—September 14th: "Good health in town and harbor."

Nassau, N. P.—September 15th: "Weather hot and rainy. City healthy."

Santiago de Cuba.—The United States consul, in his dispatch dated August 31st, denies the recent newspaper reports that the steamer City of Baltimore lost her chief officer, George Carr, by yellow fever when six hours out of Santiago de Cuba bound for Philadelphia, and thereupon returned to Santiago de Cuba and reported the death as from apoplexy. He states that both the health officer of the port and the sanitary inspector pronounce the cause of death to be apoplexy. "Outside the city limits, at the military hospital, there are about twenty cases and deaths from yellow fever. These cases are lately landed recruits,

and, as they are completely isolated from the city, do not affect the health of Santiago de Cuba, nor of its port."

September 26th: The consul telegraphed as follows: "Absolutely deny statements published Santiago, 'yellow fever reigns supreme.' Not one case in port and town. Usual number cases as all the year in military hospital, outside town limits."

Port au Prince, Hayti.—The United States consul, in his dispatch dated September 8th, relative to fever at that place, stated that "of the cases of fever it is said that three or four were yellow fever imported here. They were isolated; but a form of intermittent fever has been contracted on a couple of vessels. On the American brig Water Witch two cases, one of which is well and the other convalescent. There is no spread of the disease, and with these measures of precaution it is deemed that the city will continue in its normal state of healthfulness."

Gonaïves, Hayti.—One death occurred on the brig Fairfield at this place. The vessel sailed September 8th for New York. The health officer at New York has been notified.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—						
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.
Paris	Sept. 8.	2,260,945	872	..	..	2	17	1	22	17
Glasgow	Sept. 8.	545,678	187	..	..	..	2	..	6	..
Warsaw	Sept. 1.	441,814	241	..	..	6	..	..	8	4
Rome	Sept. 8.	391,188	180	..	..	..	1	..	3	..
Amsterdam	August 18.	389,916	130	..	..	..	2	..	1	3
Munich	August 25.	275,000	186	..	..	..	..	..	6	1
Edinburgh	August 18.	262,733	77	..	..	1	..	..	1	1
Edinburgh	August 25.	262,733	73	..	..	1	2	1	1	1
Belfast	Sept. 8.	227,022	72	..	..	..	2	..	..	..
Genoa	Sept. 8.	179,772	80	..	..	1	..	..	2	..
Trinidad	August 25.	178,270	37	..	..	..	..	..	..	..
Trinidad	Sept. 2.	178,270	27	..	..	..	..	..	..	..
Trieste	Sept. 1.	154,500	72	..	..	6	..	..	2	..
Toronto	Sept. 15.	130,000	25	..	..	..	2	1	1	..
Stuttgart	Sept. 8.	125,510	38	..	..	..	..	..	1	1
Bremen	Sept. 6.	122,000	43	..	..	..	1	1	1	..
Barmen	Sept. 8.	109,000	43	..	..	..	..	..	..	..
Leith	August 18.	74,320	20	..	..	1	..	1	1	..
Leith	August 25.	74,320	26	..	..	..	..	..	1	..
Mayence	August 25.	65,802	35	..	..	..	..	..	1	..
Mayence	Sept. 1.	65,802	28	..	..	..	..	..	..	..
Cadiz	Sept. 8.	65,028	41	..	..	..	..	..	..	..
Bermuda	Sept. 18.	15,262	..	..	..	..	..	..	..	..
Cartagena, Col'a.	Sept. 1.	13,000	7	..	..	..	..	..	..	..
Matamoras	Sept. 8.	12,000	8	..	..	..	..	..	..	..

UNITED STATES.

Buffalo, N. Y.—Passed Assistant Surgeon W. A. Wheeler, U. S. M.-H. S., has been authorized to vaccinate employees of the post office, to prevent the spread of small-pox, as requested by the postmaster.

Presque Isle County, Michigan.—Dr. James B. Patterson, in a communication to Surgeon W. H. Long, at Detroit, dated September 15th, states that "I have treated 231 cases of dysentery (epidemic), and there have been 10 fatalities. The only death that occurred when the patients were seen in the earlier stages died from pneumonia. . . . All the deaths but 1 occurred in children—none over four years. It certainly was very contagious, running through whole families, and jumping miles of territory to where some member would go; so that in every instance it was traceable. . . . The treatment most successful: Pepsin, subnitrate of bismuth, Dover's powder, sterilized milk diet. Afterward, tr. ferri chlor., tr. opii, and dry heat to abdomen."

Cape Charles Quarantine Station.—September 25th: Passed Assistant Surgeon L. L. Williams reports, with reference to the crew of the British steamer Buda Pesth: "Have examined crew; found 9 men sick with malarial fever. The cases are not suspicious."

Burgaw, N. C.—Passed Assistant Surgeon Brooks, M.-H. S., in his report dated September 20th, relative to the newspaper statement of the existence of a case of yellow fever at Burgaw, states that "the inspector sent by the State board of health has declared the case to be without doubt hæmorrhagic malarial fever."

San Rafael, Ariz.—Collector Magoffin, at El Paso, Tex., in reply to an inquiry for further information as to the small-pox at San Rafael, states that "quarantine established by county officers. No action necessary."

Tampa, Fla.—Dr. J. P. Wall, in his report dated September 16, 1888, states that "the situation here has, from the two first weeks after the appearance of yellow fever on the 7th and 8th of August, gradually improved, the cases becoming milder and less frequent, until it has about ceased entirely. During the past week I have seen nothing in the way of fever that I would positively declare to be yellow fever, nor have any cases been reported by other physicians. . . . No sickness at Plant City."

September 21st: "I am informed that 1 case of well-developed yellow fever and 5 cases of milder fever have occurred at Mango, a railroad station with few residents, 9 miles east of Tampa, and the Southern Florida Railroad. No deaths. People of adjacent country warned to keep away."

Gainesville, Fla.—Yellow fever was introduced into Gainesville by a militia company returning from duty at Fernandina.

September 16th: Three cases of yellow fever officially announced.

September 18th: The secretary of the Board of Health telegraphed: "Have isolated all cases, and am fumigating and disinfecting all premises within 100 yards of all cases. T. A. Evans, of the fever cases, died yesterday evening. No news to-day."

September 19th: "No new cases. Weather clear, prospect bright."

September 23d: "No new cases. All the sick doing well. Weather clear."

September 27th: "One death last night; no new cases. All sick convalescent and being sent out of city to Camp Perry, with all nurses and kindred."

"Not one case to-day; no deaths. Major Gruelle is the new case, and is supposed to have contracted fever by reason of being the officer who acted as fumigating officer and was in the house of the sick."

Decatur, Ala.—Mr. A. D. Spencer, the first case of yellow fever at Decatur, was taken sick September 4th and died September 11th.

In reply to an inquiry, Dr. Jerome Cochran, State health officer, telegraphed September 23d: "Need no aid at present. Very few left in city except negroes. The problem will be to feed them."

September 28th: "I want to say, and assure you in the most positive way, that the appeals made to you by the two mayors of the two Decaturs are not sanctioned by the relief committee, composed of the best people here, and will not be sanctioned by the Governor of the State."

Fernandina, Fla.—September 24th Acting Assistant Surgeon Starbuck, Marine-Hospital Service, telegraphed: "An autopsy to-day demonstrates that yellow fever exists here. Several other cases with clinical symptoms of yellow fever."

September 24th: "Twelve new cases reported."

September 25th: "The president of the Board of Health reports two deaths from yellow fever to-day."

Jackson, Miss.—In reply to an inquiry, Dr. Wirt Johnson, secretary Board of Health, telegraphed September 22d: "Thanks. We do not need assistance. There have been 10 cases of yellow fever here and 2 deaths to date."

September 25th: "Total number of cases to date, 14; deaths, 4. No new cases reported for the twenty-four hours ending 6 p. m. yesterday. Have the city surrounded by a cordon, and are doing all we can to prevent the spread of the disease. Tents have arrived to-day, and a refugee camp will be established as soon as possible."

September 26th: No new cases or deaths for twelve hours ending 6 p. m. Will have a camp of refugees established to-morrow."

September 27th: "One suspicious case reported and 1 death for twenty-four hours ending 6 p. m. Total cases to date, 14; deaths, 5."

September 28th: "No new cases or deaths for twenty-four hours ending 6 p. m."

Atlanta, Ga.—The following resolution of the Atlanta Board of Health has been received from Dr. James B. Baird, secretary, September 19th: "Resolved, That no excursion train bearing refugees from any place infected by yellow fever shall come into the city of Atlanta."

Wilmington, N. C.—Dr. Thomas F. Wood, secretary North Carolina Board of Health, states that the Board of Health have given their opinion to Governor Scales that no more refugees from yellow-fever districts will be received into the State of North Carolina unless they are placed in sanitary camps under competent guard.

Jacksonville, Fla.—September 24th Dr. J. Y. Porter telegraphed: "Took charge of yellow fever hospital yesterday; 113 cases and 5 deaths here to-day."

September 28th: "Total number of cases to date, 2,453; total number of deaths to date, 242."

La Villa Junction, Fla.—September 25th Dr. Julius Wise telegraphed: "Fumigating-station established at La Villa Junction; will be working to-day."

Camp Perry, Fla.—September 27th: "Morning report: Present—officers, 6; guards, 11; employees, including carpenters, 55. Refugees arrived, 5; discharged, 9; remaining, 171; fever camp, 4."

September 27th: "Dr. Posey fully recovered; wishes to go to Fernandina for duty."

September 28th: "Morning report: Present—officers, 6; guards, 11; employees, including carpenters, 56. Refugees arrived, 16; discharged, 26; remaining, 161. Several good people reported discharged, but can not leave for want of means."

Medical Officers of the Navy.—All the acclimated medical officers of the Marine-Hospital Service being otherwise engaged, the Surgeon-General of the Navy was asked for medical officers who had had yellow fever. Surgeon J. W. Ross and Assistant Surgeon William Martin volunteered their services, and have been assigned to duty at Fernandina, Fla., and New Orleans, La., respectively; the former to have charge of the Government relief measures at Fernandina, and the latter to await orders at New Orleans for the present.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Euteric fever.	Sarlet fever.	Diphtheria.	Measles.	Whooping-cough.
Philadelphia, Pa...	Sept. 15.	1,016,758	320	..	1	..	..	29	3	5	1	..	..
Philadelphia, Pa...	Sept. 22.	1,016,758	329	..	..	..	..	23	1	5	..	6	..
Chicago, Ill.....	Sept. 22.	800,000	273	..	..	..	..	8	4	14	12	2	..
Brooklyn, N. Y.....	Sept. 22.	793,560	376	..	..	..	..	7	4	12	1	10	..
Baltimore, Md.....	Sept. 22.	431,879	147	..	..	..	..	4	..	2	..	2	..
Boston, Mass.....	Sept. 22.	390,597	205	..	..	..	..	1	6	..	..	..	..
San Francisco, Cal.	Sept. 14.	330,000	117	..	..	..	..	8	..	1	..	..	..
Cincinnati, Ohio...	Sept. 22.	255,139	106	..	..	..	..	3	..	2	1	..	..
New Orleans, La....	Sept. 18.	248,000	120	..	..	..	..	3	13	..	3	..	..
Cleveland, Ohio....	Sept. 1.	327,861	101	..	..	..	..	2	3	..	..	1	..
Cleveland, Ohio....	Sept. 8.	327,861	101	..	..	..	..	3	3	..	..	1	..
Washington, D.C....	Sept. 22.	225,000	103	..	..	..	..	4	2	..	6	..	..
Louisville, Ky.....	Sept. 22.	200,000	61	..	1	..	..	10	..	2	..	1	..
Milwaukee, Wis.....	Sept. 22.	195,000	78	..	..	..	..	..	..	..	..	..	..
Kansas City, Mo....	Sept. 22.	180,000	35	..	..	..	..	..	1	..	..	1	..
Minneapolis, Minn...	Sept. 22.	180,000	73	..	..	..	..	5	4	..	..	..	..
St. Paul, Minn.....	Sept. 15.	175,000	51	..	..	..	..	6	2	..	..	..	..
Detroit, Mich.....	Sept. 22.	116,340	73	..	..	..	..	4	..	7	..	2	..
Richmond, Va.....	Sept. 24.	100,000	39	..	..	..	..	1	2	..	..	..	..
Denver, Col.....	Sept. 21.	96,000	39	..	..	..	..	8	..	1	..	..	..
Columbus, Ohio.....	Sept. 22.	93,000	30	..	..	..	..	3	..	..	1	..	..
New Haven, Conn...	Sept. 22.	82,000	26	..	..	..	..	1	..	..	..	..	..
Toledo, Ohio.....	Sept. 22.	80,000	21	..	..	..	..	1	1	..	..	..	..
Nashville, Tenn....	Sept. 22.	65,153	19	..	..	..	..	1	1	..	..	..	..
Fall River, Mass....	Sept. 22.	65,000	30	..	..	..	..	1	..	1	..	..	..
Charleston, S. C....	Sept. 22.	60,145	41	..	..	..	..	..	..	1	..	..	..
Reading, Pa.....	Sept. 25.	60,000	19	..	..	..	..	..	..	1	..	..	..
Evansville, Ind.....	Sept. 22.	53,000	19	..	..	..	..	..	..	1	..	..	..
Savannah, Ga.....	Sept. 21.	52,827	11	..	..	..	..	..	..	..	1	..	..
Lynn, Mass.....	Sept. 24.	50,000	13	..	..	..	..	..	..	1	..	..	..
Manchester, N. H....	Sept. 15.	41,000	12	..	..	..	..	..	..	..	1	..	..
Mobile, Ala.....	Sept. 22.	40,000	13	..	..	..	..	..	..	..	3	..	..
Portland, Me.....	Sept. 15.	40,000	17	..	..	..	..	..	..	1	..	..	..
Portland, Me.....	Sept. 22.	40,000	20	..	..	..	..	..	..	3	..	..	..
E. Saginaw, Mich...	Sept. 22.	33,000	7	..	..	..	..	..	..	..	2	..	1
Burlington, Ia.....	Sept. 19.	30,166	6	..	..	..	..	1	..	2	..	..	..
Davenport, Ia.....	Sept. 15.	30,084	7	..	..	..	..	..	..	2	..	..	..
Davenport, Ia.....	Sept. 22.	30,084	4	..	..	..	..	..	..	2	..	..	..
New Albany, Ind....	Sept. 22.	30,000	6	..	..	..	..	..	..	2	..	..	..
Altoona, Pa.....	Sept. 15.	29,546	3	..	..	..	..	..	..	..	1	..	..
Yonkers, N. Y.....	Sept. 14.	28,000	10	..	..	..	..	..	..	..	1	..	..
Yonkers, N. Y.....	Sept. 21.	28,000	13	..	..	..	..	..	..	..	..	..	..
Yonkers, N. Y.....	Sept. 22.	26,000	9	..	..	..	..	..	1	..	..	..	..
Auburn, N. Y.....	Sept. 22.	25,000	17	..	..	..	..	..	..	..	2	..	..
Haverhill, Mass....	Sept. 23.	22,500	8	..	..	..	..	..	..	..	2	..	..
Jackson, Mich.....	Sept. 21.	22,000	8	..	..	..	..	..	..	..	..	..	..
Poughkeepsie, N. Y.	Sept. 21.	21,105	7	..	..	..	..	1	..	..	..	..	..
Newton, Mass.....	Sept. 13.	20,466	7	..	..	..	..	1	..	..	..	..	..
Newport, R. I.....	Sept. 20.	20,466	9	..	..	..	..	1	..	1	..	..	..

The "Dual System" in Insane Asylums.—At the last meeting of the Medical Society of New Jersey, the following preambles and resolution, introduced by Dr. P. C. Barker, of Morristown, were adopted:

Whereas, The Morris Plains Asylum for the Insane has for the last three years been managed upon what is generally termed the "dual system"; and

Whereas, That experiment has drifted into a condition of things that has resulted in a legislative investigation of alleged mismanagement; and

Whereas, The proper treatment of insane persons can only be carried out fully when the medical staff has entire control over everything that pertains to the bodies, as well as the minds, of the unfortunate persons committed to their care; therefore be it

Resolved, That the Medical Society of New Jersey hereby expresses its unqualified disapproval of any system of management that takes the food, the clothing, or any other physical want of the patients from the care and control of the medical staff, where it properly belongs, and places it in any other hands.

ANSWERS TO CORRESPONDENTS.

No. 226.—It consists of translations from various French and German authors. The original matter is excellent, and the American editor's additions are very valuable.

No. 227.—It does not seem to have borne out the expectations that were raised by early experiments, and has apparently fallen into disuse.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A GENERAL CONSIDERATION OF TUMORS FROM A SURGICAL POINT OF VIEW.

REMARKS INTRODUCTORY TO A DISCUSSION ON TUMORS BEFORE
THE NEW YORK STATE MEDICAL ASSOCIATION,

October 10, 1888.

By JOHN W. S. GOULEY, M. D.,
SURGEON TO BELLEVUE HOSPITAL.

For many years past the importance of periodically examining the question of tumor formation in the human body has been fully recognized by physicians and surgeons, as shown by the reports of discussions, by special articles, and by treatises on tumors that appear at home and abroad. In such examinations it is sought to render available the advances made from year to year in pathogeny, to incorporate into the nomenclature all proper changes of terms, and to rearrange, in some cases, the species and varieties. The outcome of these periodical revisions is the enlargement of the field of view respecting tumors, together with the adoption of improved methods of treatment by which substantial benefits are conferred upon sufferers. The subject is not likely to be exhausted for many generations; it is always before the profession and often before the people, especially when some eminent personage is affected with malignant disease. The laity then ask—What is a tumor? Is it the same as a cancer? Has a cancer spreading roots like the claws of a crab, from which it is said to derive its name?—while many individuals gravely assert that X is suffering from a cancer and not a tumor, or from a tumor and not a cancer. It is not easy to convince certain non-medical persons that a tumor means nothing more than a swelling, and that this swelling may be benign and never return after it is cut, or may be cancerous, malignant; that, besides cancers, there are other tumors which are malignant; that there are tumors which, though benign in structure, may imperil life by their liability to bleed excessively, or by their interference with vital functions; and that there are tumors which may be infectious, glandular, or cystic.

The term tumor is here used to signify a swelling in any part of the body, exclusive of tumefactions arising from inflammatory action, contusions, wounds, fractures, luxations, aneurysms, etc. In accordance with this view, the tumors may be arranged into four classes, as follows: Class I, neoplasmata; Class II, adenomata; Class III, blastomata; Class IV, cystomata.

For the present the first class only will be considered.

The term neoplasma, meaning literally a new formation, was long ago used, for the sake of greater precision, by Burdach, and adopted by other pathologists, as the name of the class of new formations in the human body arising from simple division or from endogenous multiplication of pre-existing cells. It is applicable to certain benign as well as to malignant tumors, but not to adenomata, granulation growths, or cysts.

The reason for regarding these tumors as new forma-

tions is that they are developed independently of the matrix tissue by which they are surrounded, and that they act as independent bodies, and bear no relative increase or decrease of size with, though they derive their sustenance from, the organism. They differ in their development from the matrix tissue, and their histogenesis is very unlike the formative processes originating in inflammation. Many of the neoplasmata occur at all ages; they begin in apparently normal tissues, and are due to the persistence of embryonic germinal tissues in the otherwise mature organism, taking their rise in what may be called belated rudiments—foci of embryonic tissue which have not been utilized in elaborating normal tissues, and so have lingered on unchanged. In other words, such growths are atypical new formations, starting in latent embryonic rudiments. The germs of the growths may be very small and elude observation, being embryonic cells, or may be quite recognizable among the normal elements. These germs may long remain inactive; but when external conditions, supply of nutriment, and relation with surrounding tissues are favorable, they begin to multiply, start into new life, and form neoplasmata. The blood-vessels of neoplasmata deviate markedly from blood-vessels of normal tissues. Their parietes are very thin in tumors of low organization, and of nearly natural thickness in tumors of high organization. Lymph-vessels abound in tumors, and have been found to communicate with cancer alveoli. Such, in brief, are the views of Hasse, Cohnheim, Lancereaux, and other pathologists.

Clinical observation, supplemented by microscopical examination, has established the fact that neoplasmata of high organization are benign, while those of low organization are malignant, and that the lower the organization, the greater the malignancy. For instance, among the epithelial neoplasmata the medullary carcinomata are the most malignant, being of the lowest organization; and among the endothelial neoplasmata the round-celled sarcomata are the most malignant, being of the lowest organization.

Several modern authors classify neoplasmata clinically, or rather prognostically, that is to say, into benign and malignant tumors. Classification on such a basis is confusing and unsatisfactory, partly because varieties of certain species of benign neoplasmata, being often malignant, become so widely separated from their species that they can not be advantageously studied. Other authors endeavor to classify them on the basis of Müller's law, and also on the blastodermic theory, but with little consistency. The authors who adopt the view of His in regard to the blastodermic theory arrange certain neoplasmata into those of archiblastic and those of parablasic origin, the archiblastic being the epithelial and the parablasic the endothelial (connective-tissue) neoplasmata. The law of Müller and the blastodermic theory are both of very great service in the study of neoplasmata, but neither affords sufficient amplitude to stand as a basis for nomenclature and classification. It is only anatomy—not merely as anthropotomy, but in its wider sense of anthroposophy—that has the requisite breadth for this foundation, since, in the sense in which it is here used, it comprises embryology, physiology, his-

tology, and all that is essential to the knowledge of man in a state of health, without which it is not possible to have a correct conception of any departure from this state of health. The advantages of this broad basis are such that it deserves to be more closely and consistently adhered to than it has been by most of the investigators and teachers.

A fair knowledge of the anatomy, physiology, histology, and pathology of vegetables, as well as of the lower animals, can not fail to be of great value as a preliminary to the right understanding of the diseases of man, and very particularly of tumors, which are known to occur so frequently in the vegetable kingdom and among the lower animals.

In case of a rigid adherence to the anatomical basis of nomenclature, the following simple rules may serve to guide the nomenclator:

1. The ordinal names of neoplasms should accord with the names of the types of tissues to which their substance belongs—*e. g.*, epithelial neoplasms, endothelial (connective-tissue) neoplasms, muscle-tissue neoplasms, nerve-tissue neoplasms, vessel-tissue neoplasms.

2. The generic names of neoplasms should accord with the name of the particular tissue of which, respectively, they are chiefly composed—*e. g.*, myxoma, inoma, chondroma, osteoma, etc.

3. The specific names of neoplasms should be the same as the generic names with the affixion of the special character of the tissue entering into their composition—*e. g.*, round-celled sarcoma, spindle-celled sarcoma, giant-celled sarcoma.

Some of the generic and specific names of neoplasms are objectionable by reason of their failing to convey a correct notion of the histogenic characters of the growths which they are intended to designate. Among the most inaccurate are carcinoma and sarcoma. The first name has nothing in common with a polymorpho-cellular epithelioma, and the second was given by Abernethy to a genus with eight species of tumors having a "fleshy feel," in contradistinction from cartilaginous and osseous tumors. This term was afterward adopted by Virchow and Cornil and Ranvier for a genus of the connective-tissue neoplasms. Strictly, sarcoma can never have any other meaning than that of a fleshy tumor; therefore, in keeping with the anatomical nomenclature, a more significant name should be given to this genus. Granting that epithelioma is of epithelial origin, and that sarcoma is of endothelial origin, why, then, in accordance with its origin, should not endothelioma be used instead of sarcoma to designate the genus of lowest grade of the connective-tissue neoplasms, placing as a species of this genus the growth now known by the name of endothelioma? But, unfortunately, the terms epithelium and endothelium are not of the best. These questions are submitted to the patho-histologists for consideration in the hope that they will soon critically examine the terms carcinoma, sarcoma, and other equally inappropriate names.

4. The varieties should bear the names of their species with the affixion of the name of the substance which is superadded—*e. g.*, globo-cellular myxo-sarcoma, fuso-cellular

ino-sarcoma, giganto-cellular osteo-sarcoma, and so on with chondro-, lipo-, neuroglia-, lympho-, etc.

5. The subvarieties should bear the names of the varieties with the affixion of characters which are common to the varieties of different species—*e. g.*, telangiectatic globo-cellular myxo-sarcoma, telangiectasis occurring in many varieties of tumors.

Nomenclature and classification provisionally constructed on such a plan must necessarily be helpful in a high degree to the right understanding of the nature of the different neoplasms, besides rendering their study less laborious than heretofore, and constantly suggesting improvements.

But the subject is too large to be disposed of in a limited essay, and it would not be wise, on an occasion like this, to undertake more than its general consideration. The special investigation of its divisions and subdivisions should be reserved for future debates, and only the most salient points of theoretical and practical value should be introduced in order to elicit in brief the views of the fellows and the judgment of the association.

To this end the following questions are propounded:

Question 1.—What are neoplasms, and what are the characters which differentiate them from blastomata, and these from inflammatory processes?

Question 2.—What are the advantages of naming and arranging the neoplasms in accordance with their histogenesis?

Question 3.—What is the value of the anatomical basis to the clinician when the question of malignancy arises?

Question 4.—What are the objections to the grouping of neoplasms in accordance with benignity and malignancy?

Question 5.—What constitutes malignancy histologically and clinically?

Question 6.—What is the mechanism of the necrotic process which so often occurs in certain neoplasms?

Question 7.—What is the rationale of the recurrence of excised neoplasms in distant parts or in the viscera?

Question 8.—What is the explanation of the tendency in certain neoplasms to involve secondarily neighboring lymphatic ganglia?

Question 9.—What therapeutic deductions are to be drawn from the analysis of the genesis and history of a given neoplasm?

Question 10.—What are the indications and contra-indications of the excision of neoplasms?

Question 11.—What is the average duration of life from the time of the appearance of malignant neoplasms which have not been treated?

Question 12.—To what extent does the excision of malignant neoplasms prolong life?

Question 13.—Are malignant neoplasms ever cured?

Question 14.—What is the rate of mortality from malignant neoplasms as compared with other diseases?

In this introduction to the discussion it is not proposed to examine all the preceding questions, but to request each debater to answer one or several questions, and all the debaters to answer the thirteenth question, and finally to ask

their opinions, particularly on the questions relating to bedside diagnosis, to malignity and its degrees, to prognosis as affected by the seat of the disease, to surgical and medicinal treatment, to recurrence after ablation, and to curability of malignant neoplasms.

As pertinent to the question of malignity of some of the neoplasms, the following point will be briefly considered: Until the latter part of the last century it was believed that all tumors were at first benign, and that some of them degenerated into malignant disease through the intervention of a humor. Though it was then shown that this ancient theory of degeneration would not bear close examination, as it was discovered that many tumors were malignant from their beginning, and that others were benign and remained so, still the belief in humoral degeneration continued until the dawn of patho-anatomy; and, notwithstanding the advances made by Abernethy and Laennec, and subsequently by those who developed the cell doctrine, there has long lingered in the minds of many physicians a vague notion of some mysterious kind of degeneration of benign into malignant tumors.

The modern doctrine of metaplasia has since given its aid toward the solution of the question, Is there such a condition as the metamorphosis of benign into malignant tumors?

Retrogressive metaplasia in tumors indicates malignity, progressive metaplasia toward higher organization being a movement in the direction of benignity.

By the aid of this doctrine certain changes in the structure of neoplasms, ill understood before, can now be accounted for, but metaplasia is most probably one of the ways, and not the only way, to explain these changes. However, there are patho-histologists who declare that benign are transformed into malignant tumors *always* by reversion of their cells to lower forms of cells. It is clear that only a certain proportion and not all of the cellular element of a benign growth which has become malignant is characteristic of malignity, otherwise there would be no mixed growths, such as sarco-inoma, sarco-lipoma, etc. Is it not likely, also, that, after some local disturbance, benign growths become malignant by an accession of newly proliferated embryonic cells, and therefore, in this case, without the intervention of retrogressive metaplasia of their highly organized cells? In the varieties of these growths there is sometimes only a small proportion of the malignant element, the benign element remaining intact. In accordance with this view of the metamorphosis of new-growths it may be said that benign are not liable to be wholly metamorphosed into malignant growths. One element or another may at some time enter into the composition of a growth, and may become preponderant without entirely destroying the primary element. In this way, then, and not always by retrogressive metaplasia, benign growths may become malignant. New-growths are developed by the proliferation of embryonic cells which exist in the interstices of normal tissues and not ordinarily by retrogressive metaplasia of these tissues. The degree of malignancy is proportionate to the state of organization of the cells; the lower the organization of these cells, the greater the malignancy, the

most highly organized being those of benign growths. Whatever substance may be superadded to a tumor, even if the intruder should in time exceed it in bulk, the original element is traceable in the general mass of disease. If this were not the case, a cancer, by progressive metaplasia, would become benign, and how fortunate would be such a circumstance! But a cancer remains a cancer, a sarcoma is always a sarcoma, though it contain bone, cartilage, fibrous tissue, etc. A lipoma is always a lipoma, though a malignant element be superadded. Thus, an inoma may become malignant by the superaddition of the sarcomatous element; it is then a sarco-inoma, an ino-sarcoma being a sarcoma some of whose cells may have undergone progressive metaplasia; and a lipoma may have received an accession of the sarcomatous element and so become malignant; it is then a sarco-lipoma, a lipo-sarcoma being a sarcoma some of whose cells have been transformed into fat cells.

From warty excrescences that have existed many years upon the faces of elderly persons epitheliomata have been known to develop. This may, however, take place by retrogressive metaplasia, but not necessarily in every case.

A sufferer may be affected with benign and malignant neoplasms at the same time, and some of the benign growths may become infected with the malignant element either by retrogressive metaplasia or by an accession of newly proliferated embryonic cells. The infected growths are worsted by the retrogression or the superaddition, but the whole of their structure is not necessarily transformed.

A new-growth may have had all the clinical characters of benignity for a long time—five, ten, fifteen, or twenty years—and then, possibly after the infliction of a slight injury to the part, or even without injury, rapidly increase in size and progress as a most malignant affection, and this is as likely to be owing to an accession of newly proliferated cells of low organization as to retrogressive metaplasia. Sarcomata and carcinomata sometimes take this course. Therefore, during their period of inaction, they should be excised.

The general histogenic characters of malignity of tumors having been stated, a few words may now be said in reference to some of the clinical characters of malignity. A tumor is said to be malignant when its growth is rapid; when it exhibits a strong tendency to ulcerate; when the disease invades surrounding tissues; when it propagates itself through the lymphatics to distant parts and to the viscera; when it generalizes itself, infects the whole organism, and finally destroys the patient; or when, after complete excision, it recurs. These are the principal clinical characteristics of malignant tumors. Benign tumors sometimes recur after excision, but in malignant tumors the tendency to recurrence is constant. Some of the benign tumors are prone to necrosis, but all the malignant tumors have this tendency in a most marked degree.

A statement of the gross anatomical characters would here be out of place.

In the case of an incomplete excision of a malignant tumor, even if the smallest particle of the disease be left behind, the cells continue to multiply and, in a short time, the growth attains its former dimensions. This can not well

be regarded as a recurrence of the tumor, but as its continuation.

When newly formed tumors occur in the lymphatic ganglia, distant parts, or viscera, a few months after the excision of the original growth, it is fair, as a general rule, to look upon them as metastatic, the metastasis having occurred, perhaps, only shortly before the operation. However, the recurrence of malignant tumors may take place in these several parts without metastasis in a few months or many years after the operation.

The only true recurrence, then, is in the case of the sprouting of an entirely new formation, in the site of a completely excised tumor or elsewhere, a few months or many years after the operation.

Much preliminary study will be required before any attempt can be made to give a satisfactory answer to Question 11, *What is the average duration of life from the time of the appearance of malignant neoplasms which have not been treated?* In endeavoring to obtain the information necessary to the accomplishment of this desired end, nothing less than the analysis of many thousands of well-recorded cases should be undertaken. The opinions of different authors on this question though, in several instances, based upon the study of hundreds of cases, would doubtless be greatly modified by the examination of thousands instead of hundreds of cases. The subject needs to be reopened and investigated with the purpose of ascertaining the average duration of malignant neoplasms of different orders separately.

A contribution toward the answer of Questions 12 and 13 is now offered.

Though, in the majority of instances, the recurrence of malignant neoplasms after excision is speedy—the disease soon generalizing itself, invading vital parts, and leading to a fatal issue in less than three years—it sometimes happens that they do not recur for many years after excision. It is believed by surgeons of much experience that long periods of immunity are more common than they are ordinarily supposed to be. It is therefore important that this question be freely discussed and that an endeavor be made to determine if it can be answered with a measurable degree of accuracy. Prolonged immunity is doubtless often owing to early and thorough eradication of the growth before certain well-known symptoms have manifested themselves, but this immunity has occasionally been observed even in cases where the neighboring lymphatic ganglia had already participated in the disease.

The following cases are cited in illustration of immunity for periods varying from seven to forty years after the excision of different species of neoplasms known to be malignant. In the statement of these cases the old nomenclature is employed in most instances:

CASE I. Epithelioma of the Right Wing of the Nose; Excision and Cauterization with the Thermo-cautery; no Recurrence in Seven Years.—H. H., sixty years of age, who had for two years been inconvenienced by an epithelioma, one centimetre in diameter, above the right wing of the nose, applied for treatment in the month of August, 1881. An operation was advised and forthwith performed. The integument was incised at a point two millimetres beyond the limit of induration, encircling the growth, which was dissected from its bed. The whole

denuded surface, together with two millimetres of peripheral sound skin, was then cauterized with the thermo-cautery of Paquelin, and a layer of dry cotton was applied as the only dressing. The diagnosis was confirmed by a microscopical examination of the excised growth. Cicatrization was complete in three weeks without deformity. Seven years and two months have elapsed since the operation, and there is no sign of recurrence of the disease.

CASE II. Epithelioma of the Lip; Excision; Recurrence in Eight Years.—P. J., about fifty years of age, presented himself at the college clinic suffering from an epithelioma of the lower lip which had developed itself only a few months before, and already involved the greater part of the left cheek and the neighboring lymphatic ganglia. Operative interference was deemed inadvisable, and the patient never returned. Eight years prior to the appearance of the growth which destroyed him an epithelioma had been successfully removed from his lip, and he had enjoyed good health during the intervening period.

CASE III. Epithelioma of the Lip; Recurrence Sixteen Years after its Excision.—On the same day and during the same hour M. H., almost the counterpart of Case II, presented himself at the clinic, but, instead of eight years, he had been operated upon sixteen years anteriorly for a labial epithelioma, and was five years older than P. J. The disease had recurred, as in the case of P. J., a few months before, and was so far advanced as to forbid an operation. How long he lived after this was not learned.

CASE IV. Scirrhus Cancer of the Breast; Excision; No Recurrence in Thirteen Years.—The following is an extract of a letter lately received from Dr. Alfred L. Carroll respecting a case of mammary cancer operated upon by him: "As regards the case which I mentioned to you . . . it occurred, in 1857 or 1858, in the person of a lady, aged about forty-five, from whom I removed a scirrhus cancer of the mamma. You examined a part of the specimen after removal, and agreed with me as to the unquestionable character of the neoplasm. The adjacent lymphatic glands were not involved. I heard of, and occasionally saw, the patient for nearly thirteen years afterward, during which time there had been no sign of recurrence or secondary infection. After that time she passed from my observation."

CASE V. Scirrhus Cancer of the Breast; Excision; Recurrence in Twenty Years, when a Second Operation was performed, and followed by Cauterization of the Wound; no Recurrence in Three Years and Eight Months.—A single lady, fifty-two years of age, came to seek advice on account of two livid, hard, and painful growths, an inch and a half in mean diameter, respectively, which had sprung from a scar resulting from the excision of her left mamma for a scirrhus cancer twenty years before. Extirpation of these new-growths was advised and executed on the 29th of January, 1885, and the whole wound, whose dimensions were four by six inches, together with half an inch of the surrounding integument, was cauterized with the thermo-cautery and a dressing of dry cotton was applied.

The microscopical examination of both growths showed them to be cancerous. The fibrous stroma was very abundant, and cells of different forms were contained in characteristic alveoli.

The wound was healed in four weeks, and the disease has, so far, shown no tendency to recur.

CASE VI. Scirrhus Cancer of the Breast; Excision; no Recurrence in Twenty-four Years.—A cancerous female breast, excised by Dr. John J. Crane, was sent for examination on the day of the operation. The diseased mass exhibited the gross as well as the microscopical characters of what is ordinarily called scirrhus cancer. The wound soon healed, leaving no trace of

the original disease, the adjacent lymphatic ganglia not being involved. Twenty-four years after the operation Dr. Crane reported the patient as enjoying excellent health and free from any sign of malignant disease.

CASE VII. *Cancerous Tumor; Excision; Recurrence in Thirty Years.*—Dr. Verneuil, of Paris, mentions "the case of a lady from whom he had removed a tumor, which was examined after the operation and pronounced to be cancerous. Thirty years afterward the disease recurred in the scar, and was again extirpated. The microscopic examination completely confirmed the former diagnosis." (*British Medical Journal*, April 7, 1888.)

CASE VIII. *Scirrhus Cancer of the Breast; Recurrence Twenty-five Years after Excision, when a Second Operation was performed, the Patient Dying in Five Years without Sign of Recurrence.*—Mrs. McB., at the age of fifty, was suffering from a scirrhus cancer of the left breast, which was excised by Dr. Bushe. She remained free from cancer for twenty-five years, when the disease recurred in the scar. Dr. Alexander B. Mott, who relates the case, then took charge of her and excised the new-growth, which was of the size of a "hen's egg." She died, aged eighty, five years after the second operation, without having shown any further sign of cancerous disease. A daughter of this lady is said to have died of cancer of the breast.

CASE IX. *Scirrhus Cancer of the Breast; Recurrence Twenty Years after Excision, then Two Years after a Second Operation, and again Twelve Years after a Third Operation; no Recurrence Three Years after a Fourth Operation.*—In the year 1850 Dr. Valentine Mott excised the cancerous mamma of a woman aged forty years. The wound healed rapidly, and there was no recurrence of the disease until 1870, when a small growth appeared in the scar, and was removed by Dr. A. B. Mott. Again, in 1872, the doctor excised from the scar a growth similar to the first. There then followed a period of immunity of twelve years. In 1884 a third small growth was excised by Dr. Mott. The patient was last seen in 1887, and, though seventy-seven years of age, was in good health and free from any sign of malignant disease.

CASE X. *Scirrhus Cancer of Both Breasts; Excision; Recurrence in the Lungs Forty Years after the Operation.*—In the year 1858 a surgeon of large experience related the case of a woman, both of whose mammary glands had been excised for scirrhus cancer, who remained in good health until forty years after the operation, when she died of cancer of the lungs, as verified by an autopsy.

CASE XI. *Giant-celled Sarcoma of the Right Mamma of Eleven Years' Standing; Excision; Recurrence in Eight Years; a Second Operation; no Recurrence in Six Years.*—Mrs. J. W., fifty-five years of age, was first seen on the 4th of May, 1874, in consultation with Dr. E. F. Preston, of Suffolk County, New York. She received in 1862 a slight blow upon the right breast. One year after this she noticed in this breast a hard but painless tumor, half an inch in diameter, which in eight years increased to three inches in diameter, and became painful. Thenceforth it grew slowly until 1871; afterward its increase was more rapid, particularly in 1873, and when she called with Dr. Preston the tumor measured twenty-seven inches in its greatest circumference. The superficial veins were considerably enlarged. She was in apparently good health, though she suffered pain in the diseased breast, partly owing to its weight.

The operation of excision of the breast was performed on the 9th of May, 1874. An elastic bandage was snugly applied, and an India-rubber cord then tightly drawn around the base of the tumor to control hæmorrhage, according to Esmarch's method, and the entire mamma quickly removed. The wound was then covered with a folded towel and com-

pressed by the two hands of an assistant, who exposed for ligature only two or three bleeding vessels at a time, until thirty were tied. By this precaution the loss of blood was not in excess of eight ounces during the whole operation. The lips of the wound were stitched, and adhesive strips applied, together with other necessary dressings.

The tumor, almost entirely deprived of its blood by the elastic compression, weighed nine pounds, and proved, on microscopical examination, to be a giant-celled sarcoma. The sutures were removed on the fourth day, half of the wound having healed primarily. On the eighth day all but two of the ligatures came out. The remainder of the wound cicatrized rapidly, and the patient made a good recovery.

Fourteen years have elapsed since the operation.

Desiring to know the present condition of the patient, a letter of inquiry was addressed, on the 21st of April, 1888, to Dr. Preston, who replied as follows:

"Mrs. J. W. recovered nicely from your operation, and improved very much in her general health afterward. On the 8th of June, 1882, I removed another tumor, about the size of a goose-egg, similar to the previous one, situated in the upper portion of the chest, on the right side, not in the old cicatrix, nor very near it; indeed, the upper border of the tumor was only an inch or two below the clavicle . . . quite near the sternum. From this operation she recovered rapidly and satisfactorily. No further recurrence has taken place. . . . She is now very well, . . . sixty-nine years of age, . . . and engages every day in her usual duties. . . ."

The period of immunity after excision in the above-cited eleven cases of malignant growths averages a fraction over nineteen years.

In three cases there was no recurrence.

In seven cases the disease recurred once in each, as follows: In eight, eight, sixteen, twenty, twenty-five, thirty, and forty years.

In one case the disease recurred three times. The first recurrence was twenty years after the operation; the second, two years after the second operation, when there followed a period of immunity of twelve years; a small growth then appeared which rendered the fourth operation necessary. The patient was living and well three years after the fourth and thirty-seven years after the original operation.

Three cases are still under observation.

In one of these cases there was no recurrence seven years and three months after the operation.

In one case the disease recurred in twenty years, when a second operation was performed. There was no further recurrence in three years and eight months.

In one case the disease recurred in eight years, when a second operation was performed. Six years and three months afterward there was no sign of further recurrence.

Those surgeons who have not lost sight of all their cases after operation can doubtless give similar accounts of long periods of immunity after the excision of malignant neoplasms, although the reverse of long periods of immunity seems to be the rule. The exceptions are, however, more numerous than ordinarily believed.

According to Gross, the ablation of breast cancer is followed by "permanent recovery" in 9.05 per cent. of all cases. The period assigned by him as characterizing such recovery is "over three years."

It will be seen below that Cazin's estimate is 12.6 per cent. "permanent cures," and that he assigns over seven years as the period characterized by him as "permanent cure."

In an analysis of 519 cases of ablation of breast cancers, Gross states that 43 of these 519 cases "were still living, and 4 had died. Of these 47 cases, recurrent growths were removed in six, and there was freedom from disease after the last operation" in 32 cases for between three years and two months to six years; in 7 cases, for between seven years to nine years and six months; and in 8 cases, for between ten years and one month to fifteen years and seven months. In these cases, he says, "the average time of cure was five years and nine months, and the disease had existed before the operation, on an average, for eighteen months and four tenths."

The following, abstracted from the "British Medical Journal," April 7, 1888, shows results of much interest and the analysis of a great number of cases of tumors, serving as an additional illustration of the question of immunity after operation:

At the late meeting of the French Surgical Congress the question of recurrence of malignant growths after extirpation was discussed by Dr. Cazin, Dr. Verneuil, Dr. Labbé, Dr. Mollière, and others. Dr. Cazin, in introducing the subject, gave a summary of 564 excisions of tumors performed by himself during a period of twenty-four years. Among these tumors were myxomata, chondromata, and sarcomata, besides true cancerous growths. In 102 cases of scirrhus cancer of the breast there was secondary glandular affection in 60; of these, 7 were permanently cured, in 48 recurrence took place, 3 died, and in 2 the result was unknown. Among the remaining 42 cases in which the glands were unaffected, there were 8 cures, 28 recurrences, 2 deaths, and 5 that were lost sight of. In 120 cases of encephaloid cancer the glands were involved in 80; of these, 5 were cured, in 67 the disease returned, 4 died, and 4 could not be traced. Of the remaining 40 cases, in which there was no glandular affection, 8 were cured. Thus, in a total of 222 cases, there were 28, or 12.6 per cent., permanent cures. The cases of scirrhus cancer, viewed separately, give a total of 15 cures, or 14.7 per cent.; but, of those in which the glands were affected, only 7 out of 60, or 11.66 per cent., were cured, while of the others, in which the disease was limited to the breast, permanent cure was obtained in 8 out of 42, or a fraction over 19 per cent. Among the 120 cases of encephaloid cancer, 13, or 10.8 per cent., were cured; but of the 80 in which the glands were involved the proportion of cures was only 5, or 6.25 per cent., while of the 40 in which there was no glandular enlargement, no fewer than 8, or 20 per cent., were cured. In the cases in which recurrence took place the disease returned in from three months to seven years after the operation. . . . Dr. Cazin attributes his success to the freedom with which he removes apparently healthy tissues surrounding the growth, and to the care with which he seeks for and removes, not only diseased glands, but the lymphatics between them and the tumor. He is not content with exploring the axilla, but makes minute search in the subclavicular region, behind the clavicle, and in the supra-clavicular fossa.

Dr. Verneuil strongly favors medicinal treatment after the excision of malignant growths, while the morbid process is in abeyance, and advises a prolonged course of alkaline medication, such as may be obtained by the use of Vichy water, magnesia, etc., together with arsenic, with a view of neutralizing

the gouty diathesis, which he believes to be the predisposing cause of cancer.

Dr. Mollière, of Lyons, thinks that the great point to attend to in estimating the probability of recurrence is the patient's age. If he be young, the disease is so certain to return that he doubts if it is worth while to operate; after fifty there is a fair chance that recurrence may not take place; after seventy it is almost certain that the patient will remain free from the disease.

According to Dr. Cazin's summary, the period of recurrence of malignant neoplasms after excision ranges from the minimum of three months to the maximum of seven years, for he says of his cases "in which recurrence took place" that "the disease returned in from three months to seven years." Therefore, his twenty-eight cases were declared cured presumably only after seven years.

In view of the fact that malignant growths have been known to recur twenty, thirty, and even forty years after excision, it is scarcely safe to speak of permanent cures. The proportion of "permanent cures," or strictly of long periods of immunity, in Dr. Cazin's cases—12.6 per cent.—will strike most surgeons as an excellent exhibit when they take into consideration that in twelve of the twenty-eight "cures" there was glandular involvement, and that thirteen of these twenty-eight cases were of encephaloid cancer. In the summary of Dr. Cazin's cases, published in the "British Medical Journal," it is not stated how long he kept watch upon his "cured" cases. The question of cure is not so easily disposed of as it might seem at first sight. It does not appear that Dr. Cazin uses the term cure to signify immunity from the disease for many years, since in certain places he qualifies the term by the adjective permanent. The word cure is ordinarily employed to signify restoration of health, and therefore may be admitted in the case of a long period of immunity from a disease, but the qualifying word permanent has the distinct signification "to remain to the end." This qualification could then surely be made in any case of ablation of a malignant growth where the patient has died of some other disease two or three years thereafter; so that even the qualification permanent fails to express the intended idea. The term absolute cure is also employed to convey the notion of a cure free from limitation. But can it be truly said that malignant neoplasms are permanently or are absolutely cured? The uncertainty of the time at which excised malignant neoplasms may recur, as shown by Cases II, III, VII, VIII, IX, X, and XI, should make surgeons cautious in their prognosis.

The following case is cited to show that, even though there was no recurrence of the disease when the patient died, it could not properly be regarded as a permanent or an absolute cure:

CASE XII. *Spindle-celled Sarcoma; Excision and Cauterization with the Thermo-cautery; no Recurrence in Two Years; Death from Pneumonia.*—Mr. M., sixty-two years of age, came to solicit surgical aid, saying that, two years before, he had noticed a small, hard, flat, circular, circumscribed, movable, and painless subcutaneous growth in the left temporo-malar region. This tumor increased in area until it attained an inch and a half in diameter at the time the patient presented himself for treatment.

Immediate excision, followed by cauterization, was advised and performed. An incision was made through the apparently healthy skin a quarter of an inch from the margin of the growth, which was carefully dissected out. The whole surface of the wound, together with an eighth of an inch of the surrounding integument, was thoroughly cauterized with the thermo-cautery, and a layer of dry cotton applied to the cauterized region. Cicatrization was complete in three weeks, and no deformity ensued.

The microscopical examination proved the growth to be a spindle-celled sarcoma.

In two years there was no sign of recurrence of the disease. Shortly after this the patient died of acute lobar pneumonia.

It would assuredly not be fair to assume that, had this patient lived another year, the disease would not have recurred. Even if the case had been styled a permanent cure—*i. e.*, a cure lasting to the end of the patient's life—it could not properly have been called an absolute cure, for the reason that the patient died within the period of a possible recurrence of the disease. It is, therefore, very questionable if the terms permanent cure and absolute cure should be applied in the case of malignant neoplasms. The simple word cure, in the sense of restoration of health, seems sufficient, in view of the fact that the period of immunity from the disease after its extirpation is so uncertain.

The question, *Are malignant neoplasms ever cured?* may then be answered (1) from a strictly scientific and (2) from a clinical point of view. In the first case the answer will be negative, while in the second case it may be affirmative with qualifications. From a scientific point of view, it can not be said that malignant neoplasms are cured, since it is known that their tendency to recur is strong, and that the period of their recurrence is indefinite—if the term cure be used in the sense of restoration of health without limitation, so far as the particular disease is concerned. But if, from a clinical point of view, the term cure be used in the sense of temporary restoration of health, so far as the particular disease is concerned, it may then be said that malignant neoplasms are practically cured, especially when the period of immunity is extended to eight, ten, fifteen, twenty, thirty, or forty years after excision. A reasonable doubt as to accuracy of diagnosis naturally arises when a neoplasm, said to be malignant, is declared cured many years after its ablation, unless its relation come from an experienced clinician and include the statement of a searching microscopical examination of the excised growth by a competent patho-histologist, or unless it be known to have recurred in after-years, as in some of the cases herein reported.

The allusion to diagnosis in the preceding paragraph suggested the following note:

About thirty years ago a delicately constructed instrument, much employed by Duchenne and other Frenchmen, and also by Americans, afterward variously modified under the name of harpoon, was contrived for the exploration of deep-seated diseased tissues and the removal from their substance of a small segment for microscopical examination. This explorer, though still much used by physicians, seems to be little employed by surgeons. It should occupy its proper place among instruments

of precision for the diagnosis and prognosis of neoplasms, and should be resorted to in most cases, where there is a doubt as to the nature of growths, before deciding upon the character of the operation to be performed. But the exploration should be followed by the operation as soon as the microscopical examination can be made, within an hour if possible, in order to guard against metastasis. A case lately occurred at Bellevue Hospital in which there was reason to believe that metastasis to the internal organs was the consequence of two such explorations, the first seven, the second three days before the operation of orchidectomy for a medullary carcinoma. The patient died in six weeks after the operation, from medullary carcinoma of the mesenteric glands, liver, pancreas, and kidneys. Before the operation and for two weeks thereafter he had had no symptoms of internal disease.

When the opinion of a patho-histologist is solicited in regard to the nature of an excised tumor, he should be allowed to make a gross anatomical inspection of the entire tumor, and to indicate the removal from it of such portions as he may require for microscopical examination. When only particles of a tumor are removed for diagnosis before the operation of excision, it is not to be expected that he will be able to discover the nature of the tumor from the examination of these small parts unless they be removed from the body and not from the surface of such tumor. It is generally very difficult to form a decided opinion as to the nature of a tumor by the study of a very small portion of the growth, for small fragments may contain nothing characteristic of a particular neoplasm, and he who makes the microscopical examination in such a case can only report that he has found nothing to indicate the exact nature of the tumor.

Before dismissing the question of cure, it was thought proper to formulate briefly certain principles and procedures that may be advantageously applied in connection with the extirpation of neoplasms and their medicinal after-treatment.

1. A suspicious neoplasm, susceptible of excision, can not too soon be removed. The earlier the operation the greater the chances of prolonged immunity.
2. In the excision of malignant neoplasms, as much of the neighboring apparently healthy tissues should be sacrificed as is compatible with sound judgment.
3. Immediately after the excision of malignant neoplasms careful search should be made for diseased neighboring lymphatic ganglia, all of which should be removed.
4. Excision of multiple malignant neoplasms is contraindicated, particularly when they invade many lymphatic ganglia, or when they are disseminated in hundreds upon the surface of the body. If, however, there be among them a very large growth, seriously interfering with a vital function, the excision of this growth is warranted on account of the temporary benefit that may thus be conferred upon the sufferer.
5. When a malignant growth is in a state of ulceration, and this necrotic process and consequent putrescent discharges become a source of exhaustion to the patient, the growth, if accessible, should be forthwith removed. By this means suffering is mitigated and the life of the patient is rendered more tolerable, and may even be prolonged many months.
6. When hæmorrhage from a malignant growth threatens life, the diseased mass, if within reach, should be extirpated without delay, to prevent sudden death from a great

loss of blood, though the general infection be such as to give the surgeon little hope that the patient will live more than a few weeks.

7. When an ulcerated malignant growth involves a large cutaneous surface, a cutting operation being contra-indicated, applications of sundry kinds, such as cataplasms, soothing lotions, deodorizers, etc., should be made, and opiates should be administered in sufficient quantity to mitigate pain and insure sleep.

8. Whenever its locality and other circumstances are favorable, the whole wound resulting from the excision of a malignant neoplasma should be cauterized as freely as the nature of the case will permit.

Cases I, V, XII, and the following case (XIII), illustrate, among other points of interest, the extent of surface to which the cautery may be safely applied, particularly Cases V and XIII.

CASE XIII. *Cutaneous Epithelioma in the Hypogastric Region; Excision and Cauterization with the Thermo-cautery.*—N. R., fifty years of age, was admitted to Bellevue Hospital on the 6th of November, 1886, suffering from a somewhat painful ulcer in the hypogastric region, measuring two inches and a half by three inches and a half and having the gross characters of an epithelioma, which had made its appearance five months prior to his admission to the hospital. Excision, followed by cauterization, was advised and performed on the 13th of November, 1886. The circumscribing incision was made a quarter of an inch beyond the indurated margin of the growth, which was dissected from its bed. The whole denuded surface, together with a quarter of an inch of the surrounding integument, was freely cauterized with the thermo-cautery and a light dressing applied.

The microscopical examination of the growth was made by Dr. H. M. Biggs, whose report was confirmatory of the diagnosis epithelioma.

On the 18th of November the dressing was removed, with a part of the slough, exposing a granulating surface of three inches and a half by five inches and a half, which, on the 10th of January, 1887, was entirely healed.

The patient was seen in May, 1888. The cicatrix was sound and firm, and there was no sign of recurrence.

For some years past the thermo-cautery has been used to a considerable extent in the surgical treatment of malignant neoplasmata, one of the ways in which it has been applied being to make, with the cautery-knife, a deep incision around the growth, which is left in its place to slough if it will. But, in accordance with the principles of sound surgery, it would seem much preferable to excise the entire growth and immediately afterward to cauterize the whole denuded surface and the edges of the wound, as described in Cases I, V, XII, and XIII, than to allow the diseased mass to slough out and perhaps leave behind the germ of another growth.

The anhydrous sulphate of zinc, the chloride of zinc, chromic acid, and other potential cauteries have been used with good effect immediately after the excision of malignant neoplasmata, but the actual cautery is quicker and more certain in its effect. On these accounts it is preferable to the potential cauteries.

It is not proposed to discuss the entire question of potential cauteries, but mention should be made of Maison-

neuve's caustic arrows which have been employed in some cases where ablation with the knife could not be practiced; but they, as well as the other potential cauteries, have been used also in ordinary cases.

The application of any irritant, or a slight cauterization with nitrate of silver, in the case of epithelial growths that have been inactive for several years, has been known to cause their rapid extension and to lead to a fatal issue in the course of a few months, whereas a radical operation with the knife would have given a fair chance of immunity from the disease, possibly for a long period.

Charlatans, still preying upon the credulity of the people, are exploiting their "specifics" and arsenical and other pastes and plasters, which they appear to use without the least discrimination, their "cures" being effected only in the case of benign tumors, to which they almost invariably give the name of cancer. These pastes and plasters, which cause the most excruciating pain for several hours, almost always fail to remove the entire tumor in the case of true cancer. The portion thus left behind, however small it be, grows with great vigor in its newly tilled soil, for the ensuing irritation favors very active cell-proliferation, and in a few months the disease invades the surrounding tissues and lymphatics to the extent of sometimes contra-indicating excision, or has so infected the organism as soon to prove fatal.

The persistent local application of ice as a mode of treatment of some malignant neoplasmata was employed in 1848 by Bennett, in 1850 by Arnott, in 1852 by Simon, and afterward by Follin and Velpeau; but this agent was found only to retard the development of, and not to cure, these growths. Simon reports a case of breast cancer of the "size of an orange" which, he says, nearly disappeared in thirty-four days from the beginning of the application of pounded ice, but the disease soon after greatly increased, and the patient died in about eleven months.

For the eradication of malignant neoplasmata, compression, electricity in several of its different forms, ligation of the principal nutrient arteries of the growths, and many other more or less harsh methods, have been tried in vain. Early extirpation by means of the much-dreaded knife, particularly when it could be supplemented by the actual cautery, seems to have given the best results.

9. The medicinal treatment of malignant growths has been too generally discarded of late years. This treatment fell into disrepute because of the inconsiderate and extravagant claims made for many so-called specifics, and because it was used as a distinct means of "cure" and not as an adjuvant of surgical treatment. Very much mischief has been the outcome of attempts made to cure malignant tumors exclusively by means of internal medication which is so delusive as to lead both physician and patient to temporize until it is too late for operative interference. No kind of medicinal agent so administered has ever cured malignant tumors. Nothing short of their extirpation, principally with the aid of the knife, has ever been of any avail, and this mode of treatment often requires to be supplemented by the cautery and to be employed in an early stage of the disease. Then, and only then, are the longest periods of

immunity likely to follow, and only as a help to this end is constitutional treatment of any use.

In conclusion, and as a topic of general interest, a few of the medicinal substances used from time to time in the treatment of malignant tumors will be briefly noticed.

Innumerable "cancer specifics," some of them most loathsome, have been taken by the people in times long past, through ignorance and superstition. Even at present not a few persons advocate the employment of the most hurtful nostrums.

In the last century Stoerk proposed the use of hemlock in the treatment of cancer, and this therapeutic agent continued to be largely used by many physicians until very late years, and even now a few medical practisers persist in its employment.

Among the more modern remedies may be mentioned the red-clover tea and the tinctures of thuya and of hydrastis, the latter in doses of fifteen drops, repeated three times each day for several months.

Chian turpentine, so much in vogue twenty years ago in the treatment of cancer, has, in the last few years, been re-introduced into practice by Professor Clay, of Birmingham, England. He gives it in emulsion, and asserts that it is very efficient in carcinomata and epitheliomata, even when in an advanced stage.

The proposition of Auzias Turenne to syphilize patients recently operated upon for cancer should not be omitted from catalogues of curiosities of the literature of cancer therapeutics.

Those who reject medicinal after-treatment in cases of cancer ablation go to the other extreme of error. Many surgeons of large experience and excellent judgment favor a vigorous course of medicinal and hygienic treatment, and believe that iron, arsenic, and other reconstituents greatly aid in prolonging the period of immunity from malignant neoplasmata after their excision.

APPENDIX.

THE following schema, from an essay on the classification of tumors now in course of preparation, is appended to illustrate the method of nomenclature and classification suggested at the beginning of this discussion, the order epithelial neoplasmata, its genus, species, varieties, and sub-varieties having been selected for the purpose.

The anatomical basis is closely adhered to in this nomenclature and classification—that is to say, all the departments of anatomy are made subservient to its purposes. Any single department would not suffice to constitute the basis, while all jointly give a stable and solid foundation. Thus, descriptive anatomy, physiology, embryology, histology, etc., and the law of Müller, the blastodermic theory, morphism, and even ætism, are all laid under contribution as occasion requires.

CLASS I. NEOPLASMATA.

ORDER I. EPITHELIAL NEOPLASMATA.

GENUS I. EPITHELIOMA.

Species 1. Polymorpho-cellular epithelioma (*cancer*).

Variety 1. Polymorpho-cellular ino-epithelioma (*medullary cancer*).

Variety 2. Polymorpho-cellular hyperino-epithelioma (*scirrhous cancer*).

Subvariety 1. Telangiectatic polymorpho-cellular ino-epithelioma (*fungus hæmatodes*).

Species 2. Cylindro-cellular epithelioma.

Variety 1. Cylindro-cellular ino-epithelioma.

Subvariety 1. Papillary cylindro-cellular ino-epithelioma.

Subvariety 2. Telangiectatic cylindro-cellular ino-epithelioma.

Species 3. Squamo-cellular epithelioma (*epithelioma*).

Variety 1. Myxoid squamo-cellular epithelioma.

Variety 2. Keratoid squamo-cellular epithelioma.

Subvariety 1. Papillary squamo-cellular epithelioma.

Of the order epithelial neoplasmata, epithelioma is the only genus, and this genus has three species.

The names given to the order and genus indicate that they comprise all epithelial new-growths.

The name given to *Species 1* indicates that the tumor is chiefly composed of cells of many forms, constituting one of the essential characteristics of what is commonly called cancer.

Variety 1, of Species 1, bears the name of the species with the affixion of ino to indicate that it contains fibrous tissue; the fibrous tissue forming alveoli, with thin walls, in which the cells are inclosed. This is one of the essential characteristics of what is known as medullary cancer.

Variety 2, of Species 1, bears the name of the species with the affixion of hyperino to indicate that it has an excess of fibrous tissue; the excess of fibrous tissue forming thick-walled alveoli in which the cells are enclosed. This is the essential characteristic of what is known as scirrhous cancer.

Subvariety 1, of Variety 1, bears the name of the variety with the affixion of telangiectatic to indicate that the tumor contains dilated blood-vessels. This is the main characteristic of what has been called fungus hæmatodes.

The polymorphism of the cells of this species of epithelioma, and the presence of fibrous tissue in its varieties, show it to be derived from the elements of the epiblast, hypoblast, and mesoblast.

Species 2 is named to indicate that the tumor is chiefly composed of cylindrical epithelial cells.

Variety 1, of Species 2, bears the name of the species with the affixion of ino to indicate that it contains fibrous tissue.

Subvariety 1, of Variety 1, bears the name of the variety with the affixion of papillary to indicate that its surface is covered with papillary projections.

Subvariety 2, of Variety 1, bears the name of the variety with the affixion of telangiectatic to indicate that it contains dilated blood-vessels.

The form of the cells of this species of epithelioma shows that it is derived from the elements of the hypoblast.

Species 3 is named to indicate that the tumor is chiefly composed of squamous epithelial cells. This is the essential characteristic of what is commonly called epithelioma.

Variety 1, of Species 3, bears the name of the species with the affixion of myxoid to indicate that its cells are like those of the mucous layer of the epidermis.

Variety 2, of Species 3, bears the name of the species

with the affixion of keratoid to indicate that its cells are like those of the external layer of the epidermis, and show a tendency to horny formation.

Subvariety 1 is named to indicate the existence of papillary projections from the surface of the growth.

The form of the cells of this third species of epithelioma shows that it is derived from the elements of the epiblast.

Colloid and melanotic are not included among the subvarieties any more than other degenerations and infiltrations, on account of the fact that not only the tumors but other diseased tissues of the body are liable to colloid and fatty degeneration, and to pigmentary and calcareous infiltration.

The tumor called atrophying (shriveling) scirrhus cancer is also excluded from this classification for the reason that the condition in question is not essential to any species, variety, or subvariety. It is simply an incidental retrograde metamorphosis, a sclerous degeneration of the fibrous tissue of a polymorpho-cellular hyperino-epithelioma.

THE TREATMENT OF ACUTE ABSCESES,

BASED UPON THEIR ÆTIOLOGY AND PATHOLOGY.*

BY LE ROY W. HUBBARD, A. M., M. D.

ON first thought it might perhaps seem advisable for me to offer an apology for presenting to the society so simple and trite a subject as the one I have selected, but I think that further consideration will demonstrate that the topic is one worthy the attention of all who are interested in the scientific treatment of disease.

It is true that an acute abscess, unless of large size, deeply seated, and near an important cavity or vessel, rarely endangers the life of a patient; yet it often causes intense suffering, and the surgeon who can skillfully avert the suppurative process, or, when the abscess has formed, can quickly remove it, leaving little or no trace behind, will not only win the gratitude of the sufferer, but also add greatly to his own reputation.

During my reading upon this subject in the standard English and American text-books of surgery I have been struck with the slight advancement made in regard to the ætiology and pathology of suppuration, also the treatment of abscesses, as compared with that in some of the other branches of surgery.

The student is still confused by the elaborate and conflicting descriptions of inflammation; the advocates of Cohnheim's theory of the migration of the white corpuscles, or of Virchow's theory of changed connective-tissue cells, are still waging war, and the experiments of many scientific investigators of the present day in regard to the ætiology of suppuration are not even mentioned.

No explanation is attempted as to why an inflammation at one time results in suppuration and at another disappears, leaving no trace behind; or, on the other hand, why a suppurative process in one case goes on rapidly progress-

ing through the tissues, carrying destruction in its train, while in another the process is limited and its products circumscribed.

The treatment of abscesses, also, is practically the same as has been advocated for many years—viz., free incision, poultices, or other warm open dressings; a slow healing, accomplished by gradually diminishing suppuration and filling up of the cavity by granulations.

Gross says in regard to treatment: "It is better that the opening should be too large than too small." "A seton or tube should be introduced to carry off the discharge and a wet dressing applied."

Bryant, after advocating a very free incision, adds: "When opened, it (*i. e.*, the abscess) should be left to discharge by itself, a simple poultice or warm-water dressing being applied. He also strongly condemns squeezing of an abscess to evacuate the pus.

According to Coote, in Holmes's "System of Surgery," a soft flax-seed poultice should be applied and the remainder of the cure left to nature.

Agnew advises a large opening, the application of a light poultice for two or three days, and then a piece of linen wet with laudanum.

Erichsen, in the last edition of his work, does give, among other causes for acute suppuration, septic irritation produced by micro-organisms; and also describes Lister's plan of antiseptic treatment with the spray, irrigation with 1-to-20 or 1-to-40 carbolic-acid solutions, and complicated dressings. But he adds that this plan frequently fails to cure the abscess without further suppuration, a result which has been verified by others, including the writer. The cause for this failure will be explained subsequently.

Wyeth, in his recent work, advocates irrigation of abscess cavities with a solution of bichloride of mercury (1 to 3,000), and in some cases aspiration and subsequent injection of the same solution, but gives no reason for the treatment.

The results obtained by the plan of treatment advocated by the majority of writers whom I have quoted is known to you all. A period of healing, lasting in favorable cases from five days to two weeks, and causing great annoyance and inconvenience to the patient; the possibility of a sinus requiring long after-treatment; and in the majority of cases, finally, an ugly and disfiguring scar, which remains a lasting monument to the memory of poor surgery—is the common history of abscesses treated according to the popular methods.

As early as 1872 Hueter and Klebs taught that inflammation and suppuration could be produced by introduction into the tissues of organized infective material. A little later Lister demonstrated that suppuration, in wounds at least, could be prevented* by the exclusion or destruction of the organisms found in the atmosphere.

Koch,† in 1878, showed that by injecting decomposed blood into the connective tissue of an animal he could always produce an abscess.

* Read before the Society of the Alumni of Bellevue Hospital, May 5, 1887.

* "Beiträge zur Path.-Anatomie der Schusswunden," Leipzig, 1872.

† "Zur Aetiol. der ak. Entzündungen," Berlin, 1878. "Verhandl. der deutsch. Gesellsch. f. Chirurg., vii. Congress.

In the same year Pasteur* discovered a micro-organism in the hydrant water of his laboratory which he cultivated upon suitable media, and produced abscesses in rabbits by injecting a drop of the culture into the connective tissue. He also found this same organism present in the pus taken from five cases of furuncle and one of osteomyelitis.

Ogston,† by a series of careful experiments in 1880, demonstrated that in the pus of acute abscesses there exist microbes which can be cultivated upon appropriate media, and present characteristic growth and development.

By a series of tube and plate cultures, such as have been described to the society by Dr. Biggs, pure cultures of these micro-organisms were obtained, and when a portion of such a culture was injected into the tissue of an animal characteristic abscesses resulted.

These experiments were afterward verified and the results confirmed by von Rosenbach,‡ Passet,* and others, until it is now established beyond doubt that the pus of an acute abscess contains one or more forms of micro-organisms. These are either staphylococci, of which there are three varieties—*albus*, *aureus*, and *citreus*—or streptococci. Both of these belong to the order of cocci, and individually are indistinguishable under the microscope, but differ materially in their manner of grouping.

The staphylococci arrange themselves in masses like bunches of grapes, while the streptococci form chains. Sometimes one form alone is found, more often both. When the suppurative process is active, and accompanied by more or less severe constitutional symptoms, with the formation of thick, creamy pus, or where the tendency is toward rapid extension and destruction of tissue, the staphylococci are present alone, or in greater abundance. When, on the other hand, the process is less active and the tendency is toward limitation, the streptococci prevail.

Ogston believes that the action of these microbes is not mechanical, but due to the formation of ptomaines, which are the active agents of destruction. They gain entrance to the tissue, not only through abrasions of the surface, but also, as has been demonstrated, through the glandular openings in the skin. In this way is readily explained the spread of furuncles when treated according to the old method by free incision and poulticing.

The pus from the original furuncle, laden with germs, is distributed over the surface of the poultice, and these organisms, under the favoring conditions of heat and moisture, are easily absorbed, and become the active agents for the formation of new furuncles. While the fact of the spread of furuncles under this treatment has been recognized clinically, and the method is generally condemned, no explanation of the fact has been attempted so far as I know.

* "La théorie des germes et ses applications à la médecine." "Bulletin de l'acad. de méd.," séance du 30 Avril, 1878.

† A. Ogston, "Ueber Abscesse," Langenbeck's "Archiv f. klin. Chirurgie," 1878.

‡ "Mikro-organismen bei den Wundinfektionskrankheiten des Menschen," Wiesbaden, 1884.

* "Untersuchungen über die Aetiologie der eiterigen Phlegmone des Menschen," Berlin, 1885.

Passet found that when culture-tubes or plates of these organisms were kept at a temperature of 41° F., the growth of the microbes was arrested, but they were not destroyed, for, even at the end of two weeks, when placed in a suitable temperature (about 98° F.), they developed rapidly.

This experiment affords an explanation of the action of cold in sometimes aborting or preventing a threatened inflammation or abscess. By the lowering of the local temperature, the microbes are placed in a dormant state, and the vitality of the tissue is then sufficient to either destroy or remove them.

This same investigator also performed some very interesting experiments with regard to the action of various antiseptic solutions upon the growth of the organisms.

The solutions employed were salicylic acid, 1 to 300; carbolic acid, 2.5 per cent. and 5 per cent.; and bichloride of mercury, 0.1 per cent. Ten cubic centimetres of gelatin were used in each experiment. One hundred drops of the salicylic-acid solution were required to prevent the development of either the staphylococcus or streptococcus; thirty-five drops of the 2.5-per-cent. carbolic-acid solution, or twenty-five drops of the 5-per-cent. solution, were necessary to arrest the growth of the staphylococcus, and twenty drops of either solution for the streptococcus. On the other hand, six drops of the 0.1-per-cent. (1 to 1,000) solution of bichloride of mercury completely stopped the development of either variety.

These experiments readily explain some of the failures of treatment by the Lister plan.

Two facts seem to be quite well established—viz., the constant presence of recognized micro-organisms in the pus of acute abscesses, and, secondly, the almost absolute certainty that the injection of a pure culture of these organisms into the tissues will produce an abscess.

The question may now be properly asked, Does acute suppuration depend upon the presence of these organisms, or may it be excited by mechanical or chemical agents alone?

That traumatism alone, even though it may be severe, does not cause suppuration, provided the instrument with which the injury is inflicted is aseptic, and the subsequent treatment prevents the entrance of septic organisms, is a principle which forms the basis of our modern surgery. Repeated experiments have also shown that foreign bodies, if aseptic, may be introduced into the tissue without producing suppuration. While it is almost universally believed that traumatism of itself will not produce suppuration, the opinions of some of the best observers in regard to the action of chemical agents differ greatly. The experiments of Rosenbach, Uskoff, Orthman, and Councilman, which consisted of the direct injection of sterilized croton-oil, turpentine, etc., into the tissues, or the introduction of the same substances under the skin by means of sterilized glass tubes, which were broken after the superficial wounds had healed, would seem to establish the ground that these agents might cause suppuration. In almost every instance an abscess, or what had every appearance of one, followed the introduction into the tissues.

But, on the other hand, Straus, Schuerlin, Klemperer,

and Ruys, who repeated more recently the same experiments, but with greater antiseptic precautions, found that suppuration was the exception, and could always be traced to some imperfection in the method. Still later, the experiments by Dr. Hermann Knapp, of this city, upon the eyes of rabbits, reported in a paper published in the "Medical Record" for December 25, 1886, go far to prove that micro-organisms are the sole cause of acute suppuration.

The product which Councilman obtained from his experiments with chemical agents resembled pus macroscopically, but contained no bacteria, and cultures made from it remained sterile.

While this point may still be regarded as unproved, yet there is sufficient evidence to show that, directly or indirectly, the majority of abscesses are the result of infection by septic organisms, and to lead us to a rational plan of treatment.*

Setting aside the question of the prevention of a threatening suppuration, which is too great a subject for present consideration, what is the best plan of treatment after the abscess has formed?

The three principles which lie at the foundation seem to me to be—

1. The immediate removal, as far as possible, of the pus already formed.
2. The destruction of any microbes which may remain in the abscess cavity.
3. The prevention of the entrance of new germs from the outside.

As we have seen that bichloride of mercury is the most effectual agent for the destruction of the organisms of suppuration, a solution of this substance should be our chief reliance for the accomplishment of the first two ends. The third is secured by a suitable antiseptic dressing.

The plan which I have adopted was suggested to me by Dr. Biggs, and is as follows:

The skin over the abscess and for some distance around is first thoroughly cleansed. To accomplish this, the hair, if abundant, should be removed, and the surface washed with soap and water, and subsequently with a solution of bichloride of mercury (1 to 2,000). This may be followed by an alcohol bath, which of course is not necessary unless cultures are to be made, but still does no harm and is an additional precaution. The incision should be made with a sterilized knife, and ought to be only large enough to give moderately free exit to the pus and permit the easy entrance of the small nozzle of a syringe.

The pus should be slowly evacuated by moderately firm pressure over the surface until it ceases to flow. Then the cavity should be thoroughly irrigated with the bichloride

solution (1 to 2,000 or 4,000) until it runs out perfectly clear. If, after the first washing, pressure brings a drop of pus or cheesy particle to the wound, it is my practice to wash out the cavity again. If the abscess is small and there has not been much hæmorrhage, a tube or seton is not necessary, and the antiseptic dressing may be at once applied.

It is better to remove the first dressing at the end of twenty-four hours, and if anything like pus is present in the dressing, another washing should be employed and the dressing reapplied. As a rule, under this plan, even the skin wound will be healed at the end of seventy-two hours.

The following cases illustrate the results which may be obtained by this method of treatment:

CASE I.—E. W., aged twenty, broker's clerk, seen December 23, 1886. Two days previously he had received a blow on the right cheek just behind the angle of the mouth which had produced a slight abrasion of the skin. On the following day he noticed slight swelling, but has had no pain until this evening. He presented a small tumor at the point indicated about the size of half a filbert; the skin over it was reddened, tense, and hard to the touch. Fluctuation could be made out by grasping the tumor between the thumb and forefinger in the mouth. There was no evidence of pointing. The skin over and for some distance around the tumor was carefully washed with soap and water, bichloride of mercury (1 to 2,000), and alcohol. A small incision less than a quarter of an inch long was then made, and about a drachm of healthy pus evacuated by steady pressure. The cavity was then thoroughly washed out with the bichloride solution until the fluid ran out clear. The dressing consisted of iodol, wet borated gauze, and absorbent cotton. No tube or seton was introduced.

December 24th.—Patient seen fourteen hours after the operation. Has had no pain. A few drops of thin pus on the dressing. Cavity again washed out and dressing reapplied.

25th (thirty-eight hours after).—Cavity closed, no pus, and only a slight superficial wound remaining. Simple dressing was applied and the patient discharged. Was seen lately, and has scarcely a perceptible scar.

CASE II.—Winifred A., aged three years, was brought to the Dispensary January 21, 1887. The child is pale, badly nourished. Has a history of several abscesses upon the neck which had been treated by free incisions, the large scars of which are plainly visible. The present abscess, the mother says, began about two months ago without any apparent cause, and she had treated it with poultices. The tumor was situated on the right side below the jaw midway between the symphysis and angle; it was of about the size of a small hen's egg, distinctly fluctuating, and the skin over it livid and apparently about to slough. The method of cleansing and incision employed in the previous case was used here, and about two ounces of pus were evacuated. After washing as before, a small seton of gauze wet with the bichloride solution was introduced on account of the size and condition of the abscess. The dressing consisted of iodoform, wet lint, and cotton.

January 22d (twenty-six hours after the operation).—Child has had no pain and has been more comfortable than for two months. Removed dressing and took out seton. Washed out the cavity and reapplied dressing.

25th (seventy-two hours after operation).—Dressing dry, no pus, tenderness and redness disappeared, and only a small superficial wound remaining. A simple dressing was applied and the mother told to report if there was any further trouble. Have not seen the case since.

* Since this article was written, Professor P. Grawitz, of Greifswald, has published a series of experiments in which he has shown conclusively that certain chemical substances, if used in sufficient concentration, may produce suppuration even when free from bacteria. He has also shown that the bacteria alone can not originate the suppurative process without the presence of the ptomaines or chemical substances produced by the growth and development of the micro-organisms. But for the practical treatment of suppuration these observations do not interfere with the conclusions arrived at.

The following I consider a test case:

CASE III.—Mrs. G. C., aged forty years. The patient is a woman from whom a kidney was removed four years ago, and since that time she has had more or less symptoms of chronic uræmic poisoning, accompanied by pain, for which she has used hypodermic injections of morphine.

On December 16, 1886, I was sent for and found her suffering from intense pain caused by an abscess on the outside of the right thigh resulting from one of these injections. Not having been informed of the nature of the case, I had not provided myself with dressings, etc., and I therefore made a free incision, letting out about two ounces of pus which was distinctly fœtid, though there was no communication with the air. Poultices were ordered for twenty-four hours, and then a drainage-tube was inserted and the ordinary dressings applied. The course of healing was slow, two weeks being required to complete it.

On February 21, 1887, I was sent for again, being informed that another abscess had appeared. I found an acute abscess situated over the triceps muscle of the right arm. It was hot, tender, and very painful. I cleansed the skin thoroughly and made a small incision. The pus in this instance also was fœtid. The abscess was washed out with bichloride, and a small tube put in. Dressing: iodol, wet lint, and cotton.

February 22d.—Removed dressing. Swelling and tenderness gone; very slight discharge. Removed tube and washed out cavity again, and reapplied dressing.

25th.—Cavity closed, and only small superficial wound remaining, which healed in a day or two without any suppuration.

CASE IV.—Irene M., aged seven years. This patient has been under treatment for Pott's disease of the spine and hip disease for eighteen months, the latter trouble being nearly well.

On April 9, 1887, the mother called my attention to a swelling situated in the anterior border of the right axillary space which she had discovered that morning. This swelling had made its appearance since my previous visit, two weeks before, and had not caused enough pain to make the child complain of it. The swelling was of about the size of a pigeon's egg, fluctuation was distinct, and above the clavicle was another tumor, which communicated with the first. The skin over the axillary tumor was red, and the pus was evidently approaching the surface.

April 11, 1887.—Opened the abscess in the manner previously described, letting out about an ounce of rather thick pus. The cavity was washed out, but not quite as thoroughly as I desired, on account of the nervousness of the child. No tube or seton was introduced. Dressing: iodol, borated gauze, and cotton.

12th.—Slight discharge in the dressing. Washed out and dressing reapplied.

19th.—Cavity closed, and only a small superficial wound remains; dressing dry. Saw this patient again May 5th, and it was difficult to find the scar.

The following case is interesting as being a partial failure:

CASE V.—Anna C., aged sixteen months, brought to the Dispensary April 19, 1887. Presented an acute abscess situated in the left axilla, about the size of a small hen's egg; soft, fluctuating, and the skin over it livid. The mother said she first noticed it five days before, and she had treated it with poultices. With the usual antiseptic precautions, an incision was made and about two ounces of pus evacuated. The subsequent washing was difficult to carry out, owing to the struggles of the child. There was also considerable capillary hæmorrhage. Wishing to test

the matter, a tube was not introduced and the usual antiseptic dressings were applied.

April 20th.—The child was brought to my office, and I found what I had feared—viz., that the edges of the wound had glued together and hæmorrhage had taken place into the cavity. After opening the cavity with a director, washing out again, and putting in a tube, the subsequent healing was rapid and without suppuration.

Judging from this case, I should advise the introduction of a tube or seton for twenty-four hours where the abscess is of large size or the hæmorrhage is rather free.

The disadvantages of this plan of treatment for small acute abscesses are—

1. The amount of time and attention to details necessary to secure success, as compared with the gravity of the affection.

2. The pain which the washing out occasions being generally more severe than that caused by the incision. Adults are usually willing to endure this for the sake of more speedy cure, and with children local or general anæsthesia can be employed.

The advantages are—

1. If thoroughly carried out, an almost certain cure in from forty-eight to seventy-two hours.

2. The certainty that no septic poisoning can arise from decomposing pus.

3. The small scar, which usually disappears after a time. This is no small consideration when the abscess occurs in an exposed part, especially if the patient be a woman or child.

It seems to me the advantages of the method far outweigh the objections, and I shall continue to employ it until some better plan is discovered.

Further experience with this method of treatment of acute abscess among both private and dispensary patients has convinced me of its utility, and, where it is possible to carry out the details thoroughly, a cure can be promised in from two to four days.

130 WEST TWENTY-FIRST STREET, NEW YORK.

Optic Atrophy in Tabes Dorsalis.—According to the "Lancet," "M. Galewski has collated 1,029 cases of atrophy of the optic nerve, of which 870 occurred in males and 159 in females. Of this number, 717 were cases of locomotor ataxy, in which a syphilitic antecedent was noted 496 times. It is concluded that cases of tabetic optic atrophy comprise about two-thirds of all cases of optic nerve atrophy; that two-thirds of the cases of tabetic atrophy of the nerve are remotely related to syphilis; and, finally, that, though generally incurable, optic nerve atrophy in tabes dorsalis may be arrested when it is accompanied by certain peculiar vascular alterations."

High Altitudes in Graves's Disease.—According to the "Lancet," "Professor B. Stiller, of Buda Pesth, has recently had two cases of exophthalmic goitre (Graves's or Basedow's disease), in which remarkable results were obtained by sending the patients to high or moderately high altitudes—that is to say, to health resorts in the Carpathians and the Tyrol, varying from 1,500 feet to 5,000 feet. The explanation of the mode of action of this method of treatment is not very evident, especially as it has been generally taught that high altitudes are contra-indicated in cardiac diseases. Professor Stiller thinks it would be well to obtain further observations of the effect of altitudes not only on cases of Graves's disease, but on cases of disturbance of heart compensation generally."

A NOTE CONCERNING THE PROBABLE COURSE OF THE WILL-TRACT TO THE CRANIAL-NERVE NUCLEI.

By E. C. SPITZKA, M. D.

A NUMBER of observations have been published which tend to show that the fibers controlling the voluntary movements of the tongue, and possibly of the face, do not run within the compact bundle which in the oblongata is termed the pyramid, nor necessarily in the split-up fasciculi which represent the latter in the pons.*

In the marine mammalia the crossed and direct pyramid tracts are, as I have previously shown, entirely eliminated. The animals possess no digital movements and have no posterior extremities. Their cranial-nerve co-ordinations and functions are, however, very intricate; particularly is this true of the facial and laryngeal innervations, which are wonderfully associated in the blow-hole mechanism. It were to be assumed, then, that that part of the will-tract which is connected with the accessory facial, and perhaps the hypoglossal (?) and trigeminal motor nuclei, would be well developed.

While there are no descending fibers in the pons proper, there is a considerable nerve bundle on either side in the angle between the raphé and tegmento-pontile limit. It is marked 2 in the woodcut accompanying a former article of mine in this Journal.† This position is identical with the one occupied in the human brain by the so-called "bundle from the pes to the tegmentum." As pathological observation shows that lesion of the transverse and descending fibers of the pons is not necessarily followed by tongue or face paralysis, and an animal with an absent extremity tract has this aberrant bundle of the pes well developed, there is good reason for searching in the latter for the fibers governing the muscles of the tongue and face. The disappearance of its compact and distinct mass in the upper part of the oblongata is in favor of this view.

The bundle in question is termed by Wernicke "detached bundle from the pes."‡

Auricular Epilepsy.—"That irritation of sensory nerves may provoke an attack of convulsions, or loss of consciousness, or indeed almost any other morbid nervous phenomenon," says the "Lancet," "must be admitted sometimes even without the qualification that the central nervous ganglia are in a particularly irritable condition. There seems plenty of ground for believing that nervous attacks, not necessarily of typical character, but resembling Ménière's disease, may proceed from auricular irritation. Boucheron has attributed some of these attacks to excitation of the acoustic nerve resulting from labyrinthine compression (otopoesis) secondary to absorption of air from the cavity of the tympanum, often due to obstruction of the Eustachian tube. Insufflation of the tympanic cavity has relieved this pressure, and led to the disappearance of the epileptic phenomena. Boucheron thinks such cases are of common occurrence, and that they coexist with slight or gross lesions of the auditory nerves."

THE NEW YORK MEDICAL JOURNAL, A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 13, 1888.

PLASTERED WINES.

As is well known, what is termed *plâtrage* is practiced by many of the wine-growers of France, probably by most of them. It consists in the addition of a certain amount of plaster of Paris, for the purpose mainly of clarifying and preserving the wine. Double decomposition takes place between the plaster added and the cream of tartar (potassium bitartrate) naturally contained in the wine, and the result is the formation of a certain amount of potassium sulphate, which remains in solution. The practice has always been considered as a sophistication, but it was long thought to be innocuous, although it was recognized that it gave the wine laxative properties and sometimes made it decidedly purgative. The French sanitary authorities long ago specified the extent to which the plastering of wines might be carried without detriment to the health of consumers, fixing thirty grains of potassium sulphate to the litre (2.113 pints) as the maximum proportion allowable. For a time the courts sought to enforce this rule, but the wine-growers were loud in their protests against it, and it soon came to be looked upon as a dead letter. Consequently, as is remarked by a writer in the "Archives de pharmacie," the question of the plastering of wines, looked at from an hygienic, a commercial, and an agricultural point of view, has never been definitively settled.

The Bordeaux Society of Pharmacy recently appointed a committee to investigate the subject, and the committee's report, which was adopted, embodied conclusions substantially as follows: 1. In the present state of viticulture in the south of France and in Algeria, the plastering of wines in the mash is almost always necessary, in order to give the wines the marketable qualities sought after by consumers. 2. Facts are wanting to show that plastered wines are injurious to health. 3. The experience of numerous populations that drink only plastered wine, the experience of the many strangers who are continually traveling through the south of France and Algeria, drinking hardly anything else than plastered wine, and methodical experiments by learned bodies show that potassium sulphate in the proportion of sixty grains to the litre of wine produces no appreciable effect on the various functions of the economy. 4. The plastering of wines in the mash to the extent of producing this proportion of potassium sulphate may be authorized until facts rigorously deduced from extensive scientific experiments show the dangers or inconveniences of this amount as regards the public health.

On the other hand, a report made to the Academy of Medicine by M. Marty, representing a commission appointed to investigate the matter, concludes as follows: 1. The docu-

* Raymond et Artaud, "Archives de neurologie," vii, p. 300.

† The intra-axial course of the auditory tract, "N. Y. Medical Journal," September 18, 1886.

‡ "Abgeschnürtes Bündel des Fusses," "Lehrbuch der Gehirnkrankheiten," i, pp. 108-121, Figs. 51 to 54, inclusive.

ments pertaining to the inquiry made by the Montpellier National School of Agriculture do not seem to be of a nature to invalidate the results of the general investigation ordered by the Minister of Commerce in 1884. 2. The testimony and the facts analyzed in the present report demonstrate that excessive plastering exerts an injurious influence on the public health. 3. From the exclusive point of view of hygiene, the commission can not approve of the principle of the plastering of wines. 4. Nevertheless, in view of the producers' and dealers' necessities, and especially taking the consumers' interest into account, it thinks that it would be imprudent to exclude from the market during certain years, by too absolute a measure, wines which thus far nothing but moderate plastering has proved capable of preserving. 5. Considering that, if potassium sulphate is a natural constituent of pure wines, it ever exists in them in a proportion above sixty centigrammes to the litre, as analysis shows; that it has not been directly proved that potassium sulphate, even in the proportion of two grammes to the litre of wine, has any noxious influence on health; but that it is necessary to fix the maximum of potassium sulphate which may, without appreciable danger, be produced in wine by plastering—the commission is of the opinion that the presence of potassium sulphate in the wines of commerce, whatever may be its origin, ought not to be tolerated beyond the maximum limit of two grammes to the litre. The commission urges that the regulation formerly in force should be carried out strictly.

While, then, the pharmacists of Bordeaux content themselves with the Scotch verdict of "not proven," the Academy's commission positively affirms the injuriousness of plastered wine, and consents to moderate plastering only out of deference to interests that are constantly found in conflict with the requirements of sanitary science. It is to be feared that the plastering of French wines will go on practically unchecked, and it is reasonably certain that it will continue to be allowed to an extent not above the suspicion of noxiousness. The prospect seems to us a further inducement to the American people to restrict themselves to wines of home production.

THE RELATIVE STATUS OF EXPECTANCY AND RADICAL TREATMENT.

ALTHOUGH it can hardly be maintained at the present day that figures represent the whole or any preponderating part of the truth as concerned with ordinary investigations, it must be confessed that the relative quantities of specified drugs consumed by a given community from year to year furnish a fair index to the degree of confidence with which their action is invoked. Such a test has been applied in the case of a number of classes of medicaments by Dr. Bourgoin, the director of the *Pharmacie centrale* of the Paris hospitals, and Dr. Beurmann, a physician to the hospitals. Drawing their data from the amounts of various drugs issued to the hospitals of Paris in different years, these gentlemen have published in the "*Bulletin général de thérapeutique*" a very interesting assemblage of facts, interspersed with highly suggestive commentaries.

So far as these observations go to settle the point, it seems that the use of anodynes and soothing remedies in general has grown very decidedly of late years. For example, in 1872, three years after its introduction into the Paris hospitals, only 100 kilogrammes of chloral were used, but in the course of ten years the annual amount had risen progressively to 840 kilogrammes. The consumption of the bromides also has increased prodigiously since the year 1855, notwithstanding the general impression that their administration in epilepsy and hysterical affections, for which they seem to be chiefly employed, is productive of only temporary benefit. The authors infer that calmative medication in general has grown in favor, but they hesitate whether to impute the fact to the greater importance attached now than formerly to the mere alleviation of pain and other unpleasant manifestations of disease, or to explain it by assuming that physicians, having become more modest in their pretensions, are gradually coming to look upon the palliation of suffering as more within their powers than the actual cure of disease. It would be somewhat humiliating to entertain the latter alternative, and, indeed, it does not appear to be a fair inference from the facts, for increased attention to the alleviation of pain and other discomfort by no means precludes a simultaneous earnest contest with the essentials of morbid action. We anæsthetize more and more, but that is no sign that we do not cut as much as ever. It will hardly do to say that radical treatment is neglected because certain specified measures—such, for example, as bloodletting and the use of blisters, issues, purgatives, and emetics—have in great measure gone out of vogue. The objects formerly sought to be attained by them have not been abandoned as impossible of accomplishment; the simple truth is that other expedients, less objectionable or supposed to be more efficacious, have taken their places. That the wisdom of expectancy is now more widely recognized than was once the case may certainly be maintained, but it is the expectancy of a more skillful generation of men, ready to act promptly and vigorously at the proper moment, and courageous enough not to hide a do-nothing policy under the garb of fussiness in medication. On the whole, we can not admit that the medical practice of the present day has receded from any past ideal.

THE UNDUE MULTIPLICATION OF SPECIALTIES.

THE profession in England is threatened with a "Dictionary of Specialists," to be prepared by a non-medical person. In the circulars that this person has sent to his intended beneficiaries (or victims, as the case may be), he asks that the following particulars be supplied: "Name; address; qualifications; educated at —; specialist in —; appointments held; time of attendance; appointments formerly held; author of —; minor literary contributions; inventor of —; at home for consultation —." The simple statement of a man's specialty in an ordinary medical register or directory might prove useful and unobjectionable, and perhaps a list of his public appointments would be an addition quite tolerable; but the scheme

here outlined can but nauseate the judicious, however it may accord with the inclinations of those who think nothing is incumbent upon them but to push themselves into a special practice. It is almost as bad as the proposal lately made in this country that medical men should go about wearing a badge indicative of their calling. We are fully of the "Lancet's" opinion that the publication of such a book would be an indignity put upon the profession.

Our contemporary frankly admits, however, that "there is a specialization of work in the medical profession, and that different men do different parts of medical duty with different degrees of skill," although it contends that it is now impossible for a man to have his name admitted into the "Medical Register" without giving proofs that he is fully qualified to pursue all branches of practice. Such impossibility must be of quite recent establishment, unless our contemporary uses the word "qualified" in a very technical sense. Which one of us, having a cataract, for example, would think of submitting himself for operation to a man about whom he knew nothing but that his name was in the "Medical Register"? The "Lancet" leads up to the sober [part] of its article with a little *badinage* concerning the American Association of Genito-urinary Surgeons, intimating that the association's name is unsavory, and expressing its fear that, "if the system of specialization is to go on unchecked, there will not be many more September congresses at Washington before the Association of 'Genito-urinary Surgeons' will be broken into a hundred fragments." It is desirable, of course, and even imperative, to guard against the undue multiplication of specialties, but why an organization that has done such excellent work as the American Association of Genito-urinary Surgeons, that drew to its recent meeting so many distinguished men from abroad, and that has shown no tendency to split up into subtler constituents, should be held up to view as fostering the growth of hair-splitting specialization we are unable to see.

MINOR PARAGRAPHS.

THE ADMINISTRATION OF THE IODIDES.

DR. SÉE, says our Paris correspondent, finds that most patients prefer the iodides given simply in water. What is it, he asks, that is removed here? Evidently not the microbes or their products, which can not well be destroyed. It is the newly formed tissues themselves, or the fatty elements that go to make them up, that are reduced in amount. Cure by the iodides, then, does not depend on a specific action, but on a general modification of nutrition either for good or for evil. The patient either gets better and fatter, or worse and thinner. As to the idea that the potassium salts are muscular poisons, he shows that the sodium salts injure the excitability of muscle as rapidly as the potassium salts. Next, as to the allegation that potash has a poisonous action on the heart, he says that it also is false. Bernard and Traube injected potassium salts to prove that it was well founded; but this has no relation to iodide of potassium taken by the stomach. As much as from one to four drachms are often given without producing any bad effect. As to potash itself, Dr. Sée shows that Bunge had calculated that there were 96 grains of potash in 3 ounces of potatoes; so that the poor Irishman who

eats 32 to 48 ounces of potatoes a day swallows from $2\frac{1}{2}$ to $2\frac{1}{2}$ ounces of potash! What is this compared to the 30 grains that we give a day? This fear of potash is not founded on fact. Finally, the iodide of sodium has been said not to cause iodism, but, in truth, patients taking it have just the same symptoms of eye, nose, and other mucous troubles as with the potassium salt. The elimination of the iodide by the saliva is the same; the same metallic taste and repugnance for food follow, and, moreover, more of the sodium salt must be given to produce an effect. Professor Sée concludes that there is nothing to be gained by giving the sodium salt, while potassium iodide possesses certain advantages on account of which it should retain the favor in which it has always been held.

UNUSUAL AFTER-EFFECTS OF MORPHINE.

THE "Centralblatt für klinische Medizin" gives an abstract of an account of a case, by Dr. S. H. Scheiber, published in the "Pester medicinisch-chirurgische Presse," in which acute hallucinatory paranoia, lasting about six weeks, followed acute morphine poisoning in an hysterical woman, fifty-four years old. The woman took about three quarters of a grain of morphine, and was unconscious for two days, after which she had alexia and agraphia. On the sixth day an incipient bed-sore was found over the sacrum, which was four months in healing. During the continuance of the psychical disturbance, characterized by hallucinations and visions, the patient's memory was very much impaired and she was unable to recognize the members of her family. Recovery took place without any special treatment.

THE RETENTION OF MERCURY IN THE SYSTEM.

THERE is, of course, little ground for the popular belief that mercury taken into the system is got rid of, if at all, only after many years; and none at all for the apprehension entertained by a few persons that even a single dose of a mercurial lingers in the economy. Nevertheless, as Dr. F. Balzer and Miss A. Klumpke have shown in a recent issue of the "Revue de médecine," when the drug is administered continuously, it is well to discontinue its use for a time when the maximum amount capable of elimination by the kidneys, the chief channel of its egress, has been nearly reached. A slow elimination then goes on for a long period of time, the metal having been found in the liver after the lapse of a year. It invades all the tissues, but principally the liver and the kidneys. The amount eliminated by the urine, in cases of continuous mercurial medication, usually becomes constant in about a month, and the inference is that it is then well to stop the administration for a time.

THE "UNIVERSITY MEDICAL MAGAZINE."

WE have received the first number of this new monthly journal, dated October, 1888, a handsome octavo of sixty-eight pages of reading matter. It is edited, under the auspices of the alumni and faculty of medicine of the University of Pennsylvania, by an editorial staff consisting of an advisory committee (Dr. William Pepper, Dr. D. Hayes Agnew, Dr. William Goodell, Dr. James Tyson, Dr. William Osler, Dr. J. William White, Dr. Samuel D. Risley, Dr. R. S. Huidekoper, and Dr. Horace Jayne) and an editorial committee (Dr. George de Schweinitz and Dr. Hobart A. Hare), and published by Dr. A. L. Hummel, of Philadelphia. The contents of the first number are classed under the heads of "Original Articles," "Memoranda" (medical, surgical, obstetrical, pathological, and anatomical), "Laboratory Notes" (pathological, chemical, and therapeutical), "De-

partment Notes" (biological and dental), "Editorial," "Society Proceedings," "Book Notices," and "Miscellaneous." Nearly everything is contributed by gentlemen connected with the medical teaching corps of the university, and necessarily the publication appeals particularly to the students and graduates of that institution, but there certainly seems to be an opportunity for a new monthly journal, especially for one that gives promise of such excellence, to secure wide patronage from the profession at large. We have no doubt that the "University Medical Magazine" will meet with such favor.

THE POLYCLINIC HOSPITAL.

This new department of the New York Polyclinic occupies the upper floors of the Polyclinic Building, which have been divided into six wards for the reception of all sorts of patients except those suffering from infectious disease, and for furnishing additional facilities for clinical instruction. In conjunction with the out-patient department, long ago established, it will give the Polyclinic an ample range in clinical teaching.

THE "SATELLITE OF THE 'ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES.'"

Our readers have been made acquainted with the scope and excellence of the great annual compendium of current medical literature prepared under the direction of Dr. Charles E. Sajous, of Philadelphia. The title given above is that of a supplementary journal, one that may be said to bear about the same relation to the "Annual" that the "Index Medicus" bears to the "Index-Catalogue of the Library of the Surgeon-General's Office." It seems to us in every way a commendable publication, one that will prove specially advantageous to subscribers to the "Annual" and of value to physicians in general.

THE "BULLETIN OF THE AGRICULTURAL EXPERIMENT STATION OF NEBRASKA."

This is a serial publication issued by the University of Nebraska, published at Lincoln. The latest issue that has reached us comprises three numbers of the second volume, consolidated in the shape of a book of 414 pages of text, together with a number of inserted engravings, some of which are colored. The contents consist entirely of an essay on "Swine-Plague, its Causes, Nature, and Prevention," by Dr. Frank S. Billings, the director of the patho-biological laboratory of the university. The article gives evidence of laborious and painstaking research by a capable observer, but it also shows what we must consider a tendency to throw undeserved discredit upon the work of some other men. Many of the pictorial illustrations are well executed and instructive, but the introduction of a view of the interior of a most ordinary-looking laboratory as a frontispiece seems to us a display of bad taste. The young University of Nebraska is to be praised for its liberality in issuing the publication in quite an attractive form.

THE NEW VOLUME OF THE "INDEX-CATALOGUE."

We have received the ninth volume of the "Index-Catalogue of the Library of the Surgeon-General's Office, United States Army," a volume similar to its predecessors in size and appearance. The vocabulary runs from "Medicine (Popular)" to "Nywelt." The rapidity with which the successive volumes of a work representing so much careful labor are issued is almost as wonderful as the accuracy that characterizes the catalogue throughout. As every new volume makes the work more

largely available for reference, this promptness of issue is a matter of great importance. It is to be hoped that nothing will occur to interrupt the regular succession of issues until the catalogue is completed—within a few years now, we may fairly expect.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 9, 1888:

DISEASES.	Week ending Oct. 2		Week ending Oct. 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	95	20	43	10
Scarlet fever.....	77	10	72	10
Cerebro-spinal meningitis....	4	4	1	1
Measles.....	60	4	60	9
Diphtheria.....	80	16	67	17
Small-pox.....	0	0	0	1

The Health of New York City.—During the four weeks ending Tuesday, October 9th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 246 cases and 60 deaths; scarlet fever, 285 cases and 48 deaths; cerebro-spinal meningitis, 6 cases and 6 deaths; measles, 265 cases and 32 deaths; diphtheria, 245 cases and 61 deaths; small-pox, 3 cases and 1 death; yellow fever, 1 case and 1 death.

The Health of Kansas City, Mo.—According to the "Weekly Return of Births and Deaths" to the Health Department for the two weeks ending Saturday, October 6th, there were 89 deaths, including 4 from cholera infantum, 3 from diarrhœa, 3 from diphtheria, 8 from malarial fever, 4 from scarlet fever, 12 from typhoid fever, and 2 from typho-malarial fever.

Dr. Sayre's Treatment of Incipient Hip-joint Disease.

—In an article that appeared in last week's Journal, entitled "Mr. Reginald Harrison and Mr. Arthur Durham at Bellevue Hospital" (see page 389), it was erroneously stated that Dr. Sayre applied plaster of Paris to a boy with incipient hip-joint disease. Dr. Sayre writes to us as follows:

"I stated to the class that I put the strips of *adhesive plaster* on either side of the leg, from near the ankle to a few inches above the knee, and secured them by *first* applying a flannel bandage *very tightly*, then pressing the limb firmly for a few minutes with my warm hand, until the plaster had well adhered, when I immediately removed this *tight* bandage, and applied another *just sufficiently tight* to retain the strips of adhesive plaster in position. I said that by doing it in this way it would remain an indefinite period—often four, six, or even eight months. But I made no reference whatever to the use of plaster of Paris in the treatment of hip disease.

"The reporter also says, when describing my method of examination in order to make a diagnosis: 'The feet were kept elevated and were lowered gently without disturbing the position of the trunk till the popliteal regions were in contact with the bed.' That was true so far as the sound limb was concerned; but, when the limb on the diseased side was brought down till the popliteal space touched the table, the pelvis immediately tilted up, by the contraction of the psoas and iliacus internus muscles; and this was the important point in the examination."

Hippophagy.—Dr. R. S. Huidekoper, of the Veterinary Department of the University of Pennsylvania, is said to have

recently entertained a party of friends to whom was served, as a fillet, a choice portion of his famous mare Pandora. It is added that the diners enjoyed the unusual dish, the nature of which, however, was not revealed to them until it had been eaten.

A Generous Act.—Dr. William Pepper, of Philadelphia, has recently displayed a degree of magnanimity quite uncommon. On being asked for the bill for his services in connection with the case of the late General Sheridan, he replied that he desired that his services should be "regarded only as an expression of that deep and lasting obligation" which he, in common with all others, owed the deceased.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 6, 1888:*

HUDSON, ADRIAN, Medical Inspector. Ordered to the Naval Hospital, Mare Island, Cal.

GIHON, A. L., Medical Director. Detached from the Naval Hospital, Mare Island, Cal., and to proceed home.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 30 to October 6, 1888:*

WILLIAMS, JOHN W., Major and Surgeon, on duty with battalion of Second Artillery, now at Fort Wadsworth, New York Harbor, is granted leave of absence for one month, with permission to apply to the proper authority for an extension of one month. Par. 1, S. O. 209, Headquarters Division of the Pacific, Governor's Island, New York city, October 4, 1888.

CRONKHITE, HENRY M., Major and Surgeon, on being relieved by Captain Corbusier, will report for duty to the commanding officer, Little Rock Barracks, Arkansas, reporting by letter to the commanding general, Division of the Atlantic. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

ADAIR, GEORGE W., Captain and Assistant Surgeon, is relieved from duty at Fort Brady, Michigan, and will report for duty to the commanding officer, Fort Robinson, Nebraska, reporting by letter to the commanding general, Department of the Platte. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

CORBUSIER, WILLIAM H., Captain and Assistant Surgeon, on being relieved by Captain Taylor, will report in person to the commanding officer, Fort Hays, Kansas, for duty at that post, relieving Major Henry M. Cronkhite, surgeon, and reporting by letter to the commanding general, Department of Arizona. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person, on the dates set opposite their respective names, to the president of the Army Medical Examining Board, Army Building, New York city, for examination for promotion: MERRILL, JAMES C., Captain and Assistant Surgeon, October 16, 1888. MCCREERY, GEORGE, Captain and Assistant Surgeon, October 16, 1888. JOHNSON, RICHARD W., Captain and Assistant Surgeon, October 9, 1888. Upon completion of their examination, the officers named will rejoin their proper stations. Par. 5, S. O. 231, A. G. O., October 4, 1888.

TAYLOR, ARTHUR W., Captain and Assistant Surgeon, is relieved from duty at Fort Robinson, Nebraska, and will report in person, without delay, to the commanding officer, Fort Grant, Arizona Territory, for duty at that post, relieving Captain William H. Corbusier, Assistant Surgeon, and re-

porting by letter to the commanding general, Department of Arizona. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

RAFFERTY, OGDEN, Lieutenant and Assistant Surgeon, will stand relieved from duty in connection with the Division rifle competition, the 7th inst., and under Par 6, S. O. No. 2, c. s., Headquarters Division of the Missouri, will return to his proper station, Fort Clark, Texas. Par. 5, S. O. 95, Headquarters Department of Texas.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the four weeks ending October 6, 1888:*

PURVIANCE, GEORGE, Surgeon. To proceed to Washington, D. C., for special duty. October 3, 1888.

STONER, G. W., Surgeon. Detailed as chairman of board to select site for Marine Hospital at Evansville, Ind. October 5, 1888.

GOLDSBORO, C. B., Surgeon. Leave of absence extended fifteen days on account of sickness. September 28, 1888.

NORMAN, SEATON, Assistant Surgeon. Detailed as recorder of board to select site for Marine Hospital at Evansville, Ind. October 5, 1888.

FATTIG, J. B., Assistant Surgeon. To rejoin station at St. Louis, Mo. October 5, 1888.

MAGRUDER, G. M., Assistant Surgeon. To proceed to Way Cross, Ga., for special duty. September 15, 1888.

GEDDINGS, H. D., Assistant Surgeon. To proceed to Camp Perry, Fla., for special duty. September 15, 1888.

Society Meetings for the Coming Week:

MONDAY, October 15th: New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, October 16th: New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings, St. Lawrence (semi-annual), and Westchester (White Plains), N. Y.; Ogdensburg, N. Y., Medical Association; Hunterdon, N. J., County Medical Society (Flemington); Baltimore Academy of Medicine.

WEDNESDAY, October 17th: Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

THURSDAY, October 18th: New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, October 19th: Chicago Gynecological Society (annual); Baltimore Clinical Society.

SATURDAY, October 20th: Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

William M. Thallon, M. D., of Brooklyn, died on Monday, October 1st, in the thirtieth year of his age. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1880. He was a practitioner of much promise, and will be remembered as having contributed several meritorious articles to various medical journals.

Frederick R. Campbell, M. D., of Buffalo, a member of the editorial staff of the "Buffalo Medical and Surgical Journal,"

died at Rochester, on the 14th of September, at the age of twenty-eight years. The cause of his death was typhoid fever. He was a graduate of the Buffalo Medical College, and held the chair of *Materia Medica* and Therapeutics in the Medical Department of Niagara University. The deceased was a man of unusual literary attainments, and only a few months ago he published a work, entitled "The Language of Medicine," which has been received with much favor by the profession.

Early W. Walton, M. D., house surgeon to the Manhattan Eye and Ear Hospital, died at the hospital on Friday, September 28th, at the age of thirty-two years. The deceased was graduated in medicine from the University of Virginia in 1879 and from Bellevue Hospital Medical College in 1880. He practiced for five years in Georgetown, Texas, and then, after having taken special courses in ophthalmology and otology at the Post-graduate Medical School and the Polyclinic, was appointed on the house staff of the Manhattan Eye and Ear Hospital. He was able, faithful, and conscientious in discharging the duties of his hospital service, and had endeared himself to all his associates in the institution by his genial and manly nature, his unselfish devotion to the welfare of the patients, and the absolute honesty of his character.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Third Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, Dr. W. H. DRAPER, of New York, in the Chair.

Some Reflections upon the Relations which Scientific and Practical Medicine bear to each other was the subject of the opening address by the PRESIDENT. He stated, in the course of his introductory remarks, that the purpose of the meeting was largely to make a better union between the scientific and the practical or artistic sides of medicine; they always tended to grow apart, and yet were dependent on each other. We might differentiate the science from the art of medicine, but we could not practically dissociate them.

Scientific medicine, to be sure, was not always practical, but it was ever striving to become so; and practical medicine, though not always in a strict sense scientific, was constantly tending to that end. And yet the distinction between science and art in medicine was important to maintain, for the secure progress of both, as it was in any other department of human activity. Moreover, the progress of science in medicine was largely dependent for its inspiration on the demands which the art was constantly making upon it for the solution of its problems, while the art constantly thrived by testing and correcting the theorems furnished by science. In spite, however, of the distinctness and importance of this mutual relation, the worker in the science and the worker in the art occupied essentially distinct positions, and the aims and methods peculiar to each must be kept constantly in view, especially where combined, as they often were to a degree, in the same individual, when engaged in the instruction of others. The scientist was properly engaged in searching out the ways of nature in disease; the other in using the knowledge thus attained in doing something for its detection, its prevention, or its cure. The pathologist was concerned chiefly with the causes and effects of disease, the practitioner was absorbed in its dynamics. It was here espe-

cially that the practical man became, necessarily, in a high degree a scientist, for it was here that he occupied a field of observation that was peculiarly his own. The pedigree of disease, the variations in its type due to race and personal idiosyncrasies, the varieties and correlations of the structural and functional derangements which flow from a single vice, the protean reaction to food and medicine, and the relation of all these peculiarities to heredity, to age, to sex, to habits, occupations, and environment—these constituted the special province of the scientific work of the practical physician, and required essentially the scientific spirit. Indeed, the intelligent practitioner would always be at a certain advantage as compared with the merely scientific man. The number of laboratories and the progress in technical schools of physiology, chemistry, and pathology were constantly increasing. On the other hand, the enlargement and systematic development of the opportunities for clinical observation and experience in hospitals were progressing, not perhaps with equal steps, but it was evident that there was a growing sense of their essential and independent importance. It was well to remember that in one sense practical was always in advance of scientific medicine, and that in another it was always in its train. It was always in advance because it was ever referring new problems to science to solve. Thus the observation of the physician had not only suggested to the scientist some of the most interesting problems in biology, but some of the most important factors in their solution. It was in its train because it had continually to test and digest the material which, like unproved theorems or raw food, science suggested for its use. Science necessarily sometimes drew premature conclusions from its premises. Without the practitioner to test, adapt, transform, and assimilate the discoveries of science, and make them contribute to more exact diagnosis and more rational therapeutics, the scientific worker of to-day would be of about as much aid as the doctor in the time of Montaigne, whom the latter compared "to him who paints the sea, rocks, and heavens, and draws the model of a ship, as he sits safe at his table; but send him to sea, and he knows not how or where to steer," and added, "so doctors often make such a description of our maladies as a town-crier does of a lost dog or donkey—of such a color and height, such ears, etc.; but bring the very animal before him, and he knows it not for all that."

There was no better illustration of this relation between scientific and practical medicine than was afforded by the history of parasitism, the latest and most portentous contribution which science has made to the theory and practice of the healing art. The germ theory of disease might be said to have reformed surgery, but it was not safe to say that it might not be forging new errors in diagnosis, and beguiling us into dangerous paths in therapeutics. We might well believe that we were on the eve of momentous changes in the healing art resulting from discoveries in bacteriology, but these changes must come mainly from the independent and judicious application of these new ideas to the study and treatment of disease by the practical physician at the bedside. Already the relations of bacteria to the pathology and treatment of fever furnished an illustration of the way in which clinical observation enlarged and complicated the problem which the pathologist had to solve. Until we knew how fever was produced, and whether it was a salutary or a dangerous process, to be antagonized or let alone, we were really in no better position to treat fever rationally than we had been before the ætiological relation of bacteria to fever was suspected.

The Geographical Distribution of Typhoid Fever.—Dr. W. W. JOHNSTON, of Washington, read a long and carefully prepared paper on this subject. He first divided all the continued fevers into two series: those in which a typhoid element was

recognizable, and those in which none was present. In getting an estimate of the number of cases of typhoid fever which occurred in different parts of the United States, the reports of the census, the army, and the navy were only partially available, because they took account of fatal cases only. He had desired to get the numbers of the recovering and mild cases. They were the most difficult to get records of, opinions as to their true nature varied greatly, and their number in a given locality did not necessarily hold any proportion to the fatal cases. Accordingly, lists of questions had been sent out to physicians in all parts of the country, asking, in regard to typhoid fever in their localities, to what extent it prevailed; whether the number of cases was increasing; whether the type most met with was severe or light; what the ordinary duration was, and the frequency of relapses; what was the immediate cause of death in the fatal cases most often; and finally to what extent malaria seemed to be conjoined with typhoid, and to either cause or modify its course. Three hundred and fifty answers had been received from all quarters of the country. His plan had been to study separately those regions where typhoid commonly came in its typical form without modifications, those regions where typhoid and malaria occurred together, and those where a malarial element was clearly in the ascendency. The author exhibited two colored maps of the United States showing areas very much scattered, in which the percentages of the deaths that were due to typhoid and malarial fevers, respectively, were indicated by deeper and lighter colorings. His inquiries had elicited that in those sections where the deaths from typhoid fever were fewest there were, nevertheless, a great many fevers of an undetermined sort to which the utmost variety of names were given, such as bilious fever, autumnal fever, simple continued fever, and gastric fever. All of these were of shorter duration and without the abdominal symptoms of a typical typhoid fever. However, his inquiries had developed a constant variety as to what symptoms were necessary to entitle a fever to the name typhoid. Some even regarded as a modified typhoid a certain mountain fever, so called, which presented only fever. There were other regions which he termed submalarial. Typhoid was here more fatal. In cities much continued fever was found, sometimes in epidemics, yet often without the leading characteristics of typhoid—rose spots or abdominal symptoms. His inquiries had elicited the fact that in some of the Southern States where malaria was predominant, typhoid fever also had its worst types, but was less often of the unmixed variety than in Northern cities. Here also were every variety of autumnal fevers, going by many names, that seemed only the result of disturbances caused by the changing season, or temporary conditions in special localities.

All his correspondents had arrived at their data from a comparison of symptoms largely observed in recovering cases, not from autopsies. A typical typhoid had been blended by many gradations with continued fever. There had been no agreement whatever as to whether malarial infection either caused or made worse the typhoid element; and many added they did not know what typhoid fever was.

Our present knowledge, then, was a chaos, on account of the immense number of mild recovering cases which were either atypical or, apparently, due in part to particular localities. True typhoid and intermittent fevers were found; but also very many intermediate forms with various symptoms, some aided and some not aided by quinine. Even initial or recurring chills and sweating proved nothing definite either way. The prevailing typhoid was without its typical signs.

Dr. G. M. STERNBERG, of the army, agreed with Dr. Johnston that the term typho-malarial should be abandoned. His observations had led him to think that a majority of such cases

as had received that term were mild forms of typhoid. In reviewing the army statistics collected during the war he had found that "typho-malarial" fever had had a very low mortality. This went strangely with the prevailing idea that it was a typhoid fever with a malarial complication, and with the fact that simple typhoid was more fatal than typho-malarial fever.

Dr. W. OSLER, of Philadelphia, very emphatically called attention to the fact that the researches of Labarague had established the existence of certain characteristic changes in the blood in malaria, by which it could be distinguished from typhoid or any other fever, as had been done in all parts of Europe and America, in Algiers, and recently in India. Tuberculosis of the lungs, by an examination of the sputa, was not so clearly determined as was malaria by a study of these blood changes.

Dr. F. P. PORCHER, of Charleston, thought it remarkable that no mention had been made of irritative fever as among the continued fevers. Dr. Wood had devoted a whole chapter to its consideration. He also thought that gastric remittent fever was a distinct disease. Irritative fever was met with on a mountain plateau, resulting from exposures; or in cities, resulting from confined air. It was certainly neither typhoid nor malaria. It often resulted from a change of climate, even if apparently for the better, and from mental strains. Recent works contained nothing about it.

Dr. J. C. WILSON, of Philadelphia, said that the views of Dr. Johnston conformed to those of the physicians of Washington who had studied typhoid. In newly settled countries malaria prevailed; subsequently, as human habitations multiplied, typhoid and malaria existed side by side. With the clearance and cultivation of the land, and the increase of large towns, typhoid somehow got in and remained. But he appreciated how a case of enteric fever occurring in a city, in a region where malarial diseases prevailed, might put the physician in much doubt as to the name he should give it. Fevers more or less peculiar to limited areas of country needed careful study. Especially there should be a lookout to determine whether the typical typhoid of our text-books also occurred there. If so, might not the local fever be a light or modified form of typhoid itself? He believed the desire to force an identity between symptoms actually found and those given in some text-books as typical of such and such a fever led to great and unnecessary obscurity, and retarded our knowledge of the fevers of this country.

Dr. J. E. REEVES, of Wheeling, had made observations through a period of twenty-five years, and had gone through both very mild and very fatal epidemics. Beyond a doubt, typhoid was an infectious disease, and depended on communication from man to man in order to spread. In northwest Virginia he had traced the first entrance of typhoid into that wild expanse of country, and had followed it back to a single case brought in from Ohio in 1832. He noticed that in the lower river lands typhoid had more often the malarial type, but that up on the hills more of the typical typhoid might be found. He had failed to discover guiding symptoms by which to fully distinguish between the malarial and typhoidal elements, with respect to treatment. Still, whenever he had found a broad, flabby, creamy tongue, quinine had been very beneficial. Very noticeable features to him were the great variation in different years as to the mortality of typhoid, and its selective tendency with regard to age, children, young and middle-aged persons suffering most often.

Dr. JOHNSTON replied to Dr. Osler that he had not in his paper attempted to study the disease or its diagnosis, but had only collected views as they existed in different parts of the country. He agreed that microscopical study would give us the beginning so much needed for a new basis in making a diagnosis of typhoid.

The Management of the Stage of Convalescence in Typhoid Fever.—Dr. JAMES H. HUTCHINSON, of Philadelphia, in a paper on this subject, remarked that the convalescence of typhoid was necessarily a long, slow, and dangerous process. The first sign of its having begun was usually the fall of temperature and pulse-rate, but the favorable significance of this change was often overestimated. The fact was, the patient was in a state where a very little thing would run his temperature up or down. This state was one of great languor, with marked pallor, cyanosis in the extremities, and general emaciation. The fact that authorities differed so greatly in respect to the dietetic management of this stage should, in his opinion, put us on our guard to meet indications not always the same. Some writers advised a very light fluid diet for the first week or ten days; others allowed meat as early as the second day, and a generous diet. His own experience was against an early return to solid food—an idea which he usually had to insist upon against the earnest wishes of the patient's friends. He confined his patients to milk for quite a period, then added broth, then a little milk-toast, and, after perhaps two weeks, he gradually returned to butcher's meat and other nutritious food. Constipation and dislike were the only objections to milk diet which might arise in some patients. He had had too many cases where premature giving of solid food by a patient's friends, or the experimental ingestion of an egg or some farinaceous food, had brought back the fever. Yet, in other cases where milk was persistently vomited, solid food had been retained. Whisky was not invariably to be given, yet often might now for the first time be needed—a thing which should be determined by the same well-known signs which indicated its use while the fever was present. Tonics, iron, pepsin, and hydrochloric acid were also sometimes of use.

Complete rest was often needed in severe cases for the first week of convalescence, and return to active exertion and open air, though to be encouraged, must be very gradual and proportioned to the return of strength. Change of rooms for fresher air and variety in surroundings was advised. These patients were peculiarly weak and excitable as regarded their emotions. He urged that no exciting interviews or knowledge of unpleasant news should be allowed. The temperature was thus easily sent up, and perhaps a relapse brought on. Visiting days at the Pennsylvania Hospital were commonly succeeded by a recrudescence in the typhoid patients.

Ale, camphor, and opium sometimes helped wakefulness; urethane deserved a trial. Diarrhœa had various causes; where from ulcers still unhealed, nitrate of silver might hasten healing; if from irritation of undigested food, appropriate soothing remedies were indicated. Constipation and fecal accumulations were to be combated by enemata, and by mild laxatives, if necessary, such as fruits. Care was needed, as after any long-lasting disease, about exposure to cold. Some authorities thought a predisposition to phthisis was left in a patient after recovery. The two were not unlike.

Relapses were caused by pain, excitement, overexertion, improper diet; and though sometimes they occurred without a known cause, they were mostly due to abuses of well-known rules. Some believed the spontaneous relapses where conditions were good were due to a fresh infection of healthy Peyer's patches by the discharge of unhealed ulcers higher up. Others considered that a fresh infection had been received from without, an explanation which would not hold for cases that had been removed to a pure locality. Some thought constipation a cause. Others believed part of the original poison might have remained over in the system.

Dr. REEVES had hoped, from the title of the paper, that it would deal with some of the accidents that frequently occurred

during convalescence. Without the least cause, he had often seen patients in the fourth week suddenly seized with abdominal pain as if a perforation had occurred, and yet they had recovered. He had seen mitral disturbance arise in like manner in the heart; or hallucinations or temporary mental derangement.

Dr. G. L. PEABODY, of New York, speaking of the question as to giving a typhoid convalescent solid food, thought for many it would be injudicious at an early period, especially if they had suffered severely from the disease and were badly depressed and anæmic, without desire for more than light milk diet, or perhaps quite without appetite. These cases made quite a class. But where the appetite returned early or even before the fall of temperature, he began early by trying the effects of a small allowance of finely divided meat; and where recrudescences had occurred, he had not thought them caused by the meat; at least he had not met with bad results from its use; on the contrary, improvement had often been at once obtained. He thought an egg no softer than finely divided meat and no less likely to do harm if undigested. In regard to ulcers as a cause of diarrhœa, he was compelled to differ with Dr. Hutchinson. He had too often, in cases he had followed to the autopsy-room, found large ulcers, and yet when there had been marked constipation. He believed diarrhœa was due to a general catarrhal affection of the inner coat of the intestine. In the absence of this condition, and of any marked state of depression, he believed in giving solid food soon after defervescence.

Dr. ORD, of London, agreed with Dr. Hutchinson in the main as to diet and solid food. His experience in a number of cases led him to an agreement with Dr. Peabody also, under the conditions just laid down by that gentleman. Recent experience had warned him that one must to some extent be guided by the desire of the patient. He related a case where with convalescence a large daily range of temperature had set in, which had mounted from three or four to seven or eight degrees, accompanied by delirium, in which the patient, a lady, menaced her physicians, followed by increasing disorder of mind and craving for food. This patient had been on a diet of beef-tea two thirds and milk one third, and for two days previous to the delirious attack had been given two eggs daily in addition. It was hardly a delirium from starvation. As an experiment a piece of delicate boiled fish (sole) had been allowed her. This was followed within twenty-four hours by a return to normal temperature, the delirium ceased, and convalescence continued to recovery without interruption. He believed that the patient was primarily in need of close study, and his fever after that. As to diarrhœa, he thought Sir William Jenner's explanation reasonable—that severe diarrhœa was commonly associated with considerable ulceration in the large intestine, the latter accompanied usually by extensive catarrh. The presence of diarrhœa largely depended on the epidemic in question. It had been common in London for some years back. It had a bearing also on the occurrence of relapses. It had been found in England that epidemics in which constipation was a noticeable feature had many relapses of the whole course of the diseases, not recrudescences merely. English physicians had learned to give castor-oil in these cases, convinced that long constipation allowed time for the germs to produce a second infection from within. He asked if periostitis, deep ulceration of the larynx, and phlebitis often followed protracted cases here in America as they did in England. Phlebitis had always puzzled him.

Dr. F. P. KINNIQUITT, of New York, believed relapses were due to reinfection, not to errors in diet, but that many severe recrudescences, and sometimes deaths, did result from premature return to solid food. While cases occurred where solid food early in convalescence was of benefit, he thought that if too

much space were given to this fact in our minds abuses would easily result. He believed the old rule given by Dr. Hutchinson to be the best general one obtainable, applying to the vast majority of cases—namely, very light diet for the first ten days after defervescence.

Dr. F. C. SHATTUCK, of Boston, spoke of having noticed in some cases during convalescence a persistent elevation of temperature, which had only been relieved by getting the patient out of bed. He was satisfied it was not uncommon, and that it was simply a sort of bed-fever. He thought it should be recognized, because its significance was slight. The more he saw of febrile movements, the more convinced he was that their ways were past finding out.

Dr. HUTCHINSON remarked that Dr. Da Costa had some years ago called attention to the form of bed-fever cured by ordering the patient out of bed. On the other hand, recrudescence would certainly be caused by the patient's leaving the bed too early. It was also frequently due to masturbation. Among the sequelæ he had found endarteritis and orchitis common. Time had prevented him from reading that part of his paper giving the sequelæ. A pamphlet had been published by Dr. Keen, of Philadelphia, giving a full description of all of them.

On Some Forms of Paralysis after Typhoid Fever.—Dr. GEORGE ROSS, of Montreal, read a paper, beginning with a quotation from Dr. Baly that "a book on the diseases of convalescence might be one of the most valuable that any physician could write." It was an interesting question how far such affections as paralysis might be sequelæ special to some of the acute diseases. Without doubt they were unique and peculiar to certain diseases, and often by a direct nervous disturbance in the nutrition of certain parts of the body. In the case of typhoid, the strain on the nervous system was long and severe; and that it should begin to give way in its weaker parts was natural and to be expected. The signs of exhaustion were usually marked in proportion to the severity of the fever. But, besides this general result of the high temperature and the typhoidal poison, there were symptoms pointing to peculiar lesions in the cerebral cortex and in the spinal centers and nerves, affecting both sensory and motor functions.

According to Nothnagel, the order of frequency with which different sorts of disturbances arose was as follows: 1. In parts supplied by one nerve, such as the ulnar, peroneal, or circumflex. 2. In parts supplied by several nerves, giving paraplegia, especially of the lower extremities. 3. Less frequently paraplegia in one extremity, upper or lower, or in two extremities in crossed order. 4. Sometimes paraplegia in combination with anæsthesia more or less complete. The lesions in the nervous system might be either a true interstitial neuritis or a parenchymatous degeneration. Where the lower limbs simply remained weak it was probably by reason of the general exhaustion. But other cases showed lesions which were peculiarly located and of special causation. They were in the nerve trunks, though in time they were recovered from. Neuritis might exist in a few or in many fibers of a nerve, and so give rise to mild or acute symptoms. As for the cause, it was beyond doubt the typhoid poison, and not the condition of anæmia, for this latter alone would not tend to give certain forms of disturbance in the nervous system now recognized as characteristic of typhoid. Whatever it was that did the mischief, it took on an immense variety of forms and degrees of severity, but mainly gave rise to pains, areas of increased cutaneous sensibility, and paralysis. Proliferation of the interstitial nervous connective tissue, followed later by contraction of the same, was the cause of many if not of most of the lesions.

Dr. ORD, of London, remarked that peripheral neuritis and paraplegia were uncommon in England after typhoid. More

commonly met with were cerebral weakness, imbecility, or a protracted silence; also a monotony or inarticulateness in speech, loss of word memory (in one case completely), and very slow speech. Only children presented these cases. Recovery was slow. He believed these changes in faculty due to exhaustion, or degeneration in the great nervous centers, the latter caused by the typhoid poison, the former by the fever. In dealing with the complications and sequelæ of typhoid, he found it convenient to classify them into those inherent to that particular kind of fever, into those resulting simply from the continuance of high temperature, and into those which resulted from latent irregularities of constitution which the exhaustion of the disease had brought to the surface, such as a phthisical tendency, a rheumatic diathesis with its lesions in heart, brain, long bones, and joints, or the hidden results of alcoholism.

Dr. F. MINOT, of Boston, suggested the possibility of these different sequelæ being caused by the entrance of a single germ into the system, which, nevertheless, had several capacities for mischief, as well as by germs of a new sort. Pneumonia and cerebro-spinal meningitis had apparently the same microbe as their cause. Again, the germ from healthy human saliva would produce pneumonia in an animal, with true pneumonic germs in its tissues after death. So, perhaps, the same germ which caused the typhoid, entering later and finding an altered set of conditions, might cause the sequelæ. Dumbness might be explained by either of the above theories. Or it might be entirely nervous in its origin. He had seen several hours of dumbness succeeding an attack of chorea.

(To be continued.)

Book Notices.

The Nervous System and the Mind. A Treatise on the Dynamics of the Human Organism. By CHARLES MERCIER, M. B. London and New York: Macmillan & Co., 1888. Pp. xi-374. [Price, \$4.]

Nor a little of the matter contained in this book is to be found in the writings of Mr. Herbert Spencer; indeed, the author states as much. Dr. Hughlings Jackson's special theories also have been largely drawn on. Yet, it must be admitted that the author has displayed considerable skill in the arrangement of facts, decided analytical power, and no little acuity of reasoning—faculties most valuable in the elaboration of any argument, and absolutely indispensable where, as in psychology, so much is left to deduction. The book must, therefore, prove of great value to the student of mental science, albeit he will look into it in vain for new data.

Die Rolle der Suggestion bei gewissen Erscheinungen der Hysterie und des Hypnotismus, kritisches und experimentelles. Von Dr. ARMAND HÜCKEL, früher 1. Assistenzarzt an der medicinischen Klinik zu Tübingen. Jena: Gustav Fischer, 1888. Pp. 72.

THE main object of this work is to show not only that it is possible to induce the phenomena of hypnotism in hysterical persons by means of suggestion, but that most of those phenomena are in fact so produced. As the author clearly shows, paralysis, anæsthesia, and "transference" of the latter may all be made to appear in hypnotized hysterical subjects without invoking other agencies than suggestion. The entire mono-

graph is written in a highly philosophical spirit, and can not fail to interest all who find matter for thoughtful speculation in hypnotism and cognate subjects.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of General Pathology, designed as an Introduction to the Practice of Medicine. By Joseph Frank Payne, M. D. Oxon., F. R. C. P., Physician and Joint Lecturer on Pathological Anatomy at St. Thomas's Hospital, etc. With One Hundred and Fifty-three Illustrations. Philadelphia: Lea Brothers & Co., 1888. Pp. xiv-17 to 528. [Price, \$3.50.]

Contributo allo Studio della Spermatogenesi nei Vertebrati. Nota del Dott. C. Bergonzini. Modena: G. T. Vincenzi e Nipoti. 1888.

The Theory and Practice of the Ophthalmoscope. A Hand-book for Students. By John Herbert Claiborne, Jr., M. D., Instructor in Ophthalmology in the New York Polyclinic, etc. Detroit: George S. Davis, 1888. Pp. xi-77. [The Physicians' Leisure Library.]

Remarks on Pelvic Inflammations and the Management of their Residues. By William Warren Potter, M. D., etc., Buffalo, N. Y. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Index-Catalogue of the Library of the Surgeon-General's Office. United States Army. Authors and Subjects. Vol. IX. Medicine (Popular)—Nywelt. Washington: Government Printing-Office, 1888. Pp. 13-1054.

The Ear and its Diseases. Being a Practical Contribution to the Study of Otology. By Samuel Sexton, M. D., Aural Surgeon to the New York Eye and Ear Infirmary, etc. Edited by Christopher J. Colles, M. D., Assistant Aural Surgeon to the New York Eye and Ear Infirmary. With Numerous Illustrations. New York: William Wood & Company, 1888. Pp. xii-461.

Reports on the Progress of Medicine.

ANATOMY.

By MATTHIAS L. FOSTER, M. D.

The Epiglottis.—Mr. Mayo Collier is dissatisfied with the descriptions given in the text-books of the larynx in general and of the epiglottis in particular. Hence he furnishes a description which differs from them in some respects, in the "Journal of Laryngology and Rhinology" for June, 1888. The epiglottis may be looked upon as a partition moored by various bands between the oral and pharyngo-oral cavities. It is attached by its lower pointed extremity to the angle between the two alæ of the thyroid cartilage, and rests on this pointed extremity. It is formed of fibro-elastic cartilage, with thick, sharply cut edges, which curve backward slightly and are embraced by the mucous membrane on the inner and outer aspects of the aryteno-epiglottidean folds. The mucous membrane on the inner aspect of the aryteno-epiglottidean fold passes to the posterior surface of the epiglottis over its free border; on the outer side the mucous membrane does not come in contact with the anterior edge of the free border, but passes upward and outward at some distance on to the hyo-epiglottic membrane, a thin membrane, very strong, composed of elastic tissue, attached to the whole length of the hyoid bone. It is co-extensive with the epiglottis in the middle and passes off on each side to a little above the great cornu of the hyoid bone, forming the two folds known as the lateral glosso-epiglottic ligaments. This name the writer stigmatizes as most incorrect, because these folds have no connection, except from the continuity of the mucous membrane, with any portion of the tongue. The unattached portion of the membrane passes upward and forward to line the fossa for the tonsil. The anterior aspect is covered with mucous membrane continuous with that of the tongue, the posterior with mucous membrane continuous with that on the outer aspect of the aryteno-epiglottidean fold. Below, the posterior aspect of the hyo-epiglottic membrane forms the anterior boundary of a pyramidal space, through which the superior laryngeal artery and nerve pass. The thyreo-hyoid

membrane, which is usually described as forming the base of this space, he maintains does not exist. The lateral thyreo-hyoid ligament, extending from the tip of the great cornu of the hyoid bone to the tip of the upper cornu of the thyroid cartilage, is a well-marked and important structure.

The Minute Structure of the Corpora Striata and Optic Thalami.—Dr. Marchi, after extensive study, has arrived at the following conclusions, given in an essay which obtained the prize given by the Royal Institute of Lombardy ("Dub. Jour. of Med. Sci.," June, 1888):

1. The nerve cells met with in the corpora striata are of two sorts—great and medium. They are furnished with numerous prolongations, among which one only is distinguished by special characters, and this one is the nerve prolongation; all the others correspond to the so-called protoplasmic prolongations.

2. The nerve prolongations behave in two ways; some of them, at a short distance from their origin, lose their proper individuality, subdividing in totality, and giving place to a very fine nervous network (cells of the second type); the others go directly to constitute the axis-cylinder of a fiber, but not without giving forth some slender branches, which are lost in the nervous network before mentioned (cells of the first type).

3. In the two nuclei of the corpus striatum both types of cells are observed, with prevalence of those of the second type; this predominance is, however, less pronounced in the lenticular nucleus.

4. In the optic thalami we do not find isolated groups of cells; they are scattered irregularly in the whole mass of the gray substance; they are prevalently large, and many are very similar to those of the anterior cornua of the spinal cord; they present, as in the corpora striata, the unique nervous prolongations and many protoplasmic prolongations.

5. Cells of the first type predominate in the optic thalami, which thus differ from the corpora striata.

6. In correspondence with the twofold behavior of the nervous prolongation, the fibers join with the cells of the corpora striata and optic thalami, either by directly coalescing with the nervous prolongation of the cells of the first type, or indirectly losing themselves in the thick netting formed by the nervous prolongations of cells of the second type, together with the lateral branches, emanating from the prolongation of the cells of the first type.

7. The internal capsule contains fibers which unite the cerebral peduncles directly to the corona radiata; others, departing from the peduncle, halt in the ganglia of the base; others go from these to the corona radiata; finally, some spring from the cells contained in the thickness of the capsule itself, and take an ascending or descending course.

8. The protoplasmic prolongations are in relation by their fine ramifications with the vessels and with the cells of the neuroglia.

9. The neuroglia is essentially represented by cells having numerous long, fine prolongations, ramifying many times; they proceed by means of various expansions to be inserted on the walls of the vessels.

10. The ependyma which covers the corpora striata and the internal faces of the thalami is constituted by cylindrical cells, the slenderest part of which is continuous with a prolongation which gives place to very many ramifications, most of which are inserted into the vessels.

From these anatomical facts Marchi is inclined to believe that the corpora striata are mainly sensory and the optic thalami motor, though the functions of both are probably mixed.

Cyclopia.—This is the subject of an essay by Professor Hannover, of Copenhagen, abstracted at considerable length by Mr. Knott ("Dub. Jour. of the Med. Sci.," May, 1888). Included under this term are not only single eyes, as the name implies, but cases in which two eyeballs were completely formed, each in its own orbit, but with the intermediate septum absent. The monstrosity does not affect the eye alone, but the ethmoidal and part of the sphenoidal segments of the primordial cartilage of the skull, as well as the bones formed in these cartilaginous portions, the upper part of the pharynx, and portions of the brain, including alterations in the optic and olfactory tracts. The malformations of the eye and of the primordial cartilage he considers to be due to an arrest of formation, the others to arrest of development. As the

formation of the eye is double from the beginning, the occurrence of cyclopia can not be due to an arrest of development, but must arise from a lack of formative material in the parts of the eyes naturally placed in juxtaposition. In the primordial cartilage the prechordal portion—the portion not traversed by the notochord—is absent or incomplete from the absence originally of formation material. Dependent on this is a deficiency of formative material in the part between the two orbital regions, which is made up of bones formed in membrane without preceding cartilage. The pharynx ends above in a dome-like *cul-de-sac*; the orifices of the nasal fossæ are wanting both anteriorly and posteriorly. An osseous plate extends in these fœtuses vertically or a little obliquely from the horizontal part of the palate bone, and ends on the lower surface of the body of the sphenoid, seeming to close the posterior orifice of the nasal fossæ. Traces of the canal of Rathke—a fœtal communication between the brain and the buccal cavity—are rarely found in normal fœtuses at birth, but the author finds in nearly all the cyclopic fœtuses which have been examined a round cæcal opening having the appearance of a large nutritive canal at the bottom of the sella turcica. In the brain are to be found indications of an arrest of development not dependent on the fusion of the eyes. The cavities of the great brain are represented originally only by the third ventricle, and it is this condition which is preserved in the brains of those fœtuses when mature, for we find a deficiency, more or less considerable, of the normal separation between the lateral ventricles of the two sides. The great longitudinal fissure and the falx cerebri may be wanting, the anterior part of the forebrain forming a single lobe, with the convolutions effaced. The olfactory bulbs, corpus callosum, and fornix are absent, as may also be the corpora striata.

When the eyes remain distinct the nose preserves its usual place between them, with some changes of form and aspect, but when there is a single eye the nose is placed like a proboscis immediately above the upper lid. Most of the bones in the cyclopic cranium present peculiarities, the most marked of which are the very obtuse angle of junction between the vertical and horizontal portions of the frontal bone, the forward displacement of the temporal bones, the absence of the antrum of Highmore and of the intermaxillary bones, the altered form of the superior maxillary bones, the position of the lacrymal, the absence of the nasal, the osseous growth from the palate described above, and very considerable changes in the sphenoid and ethmoid bones.

Hannover gives these results from the examination of eighteen cyclopic fœtuses. Half of these monsters arrived at full term, the rest at six or eight months. They die in a few hours if born alive, but are usually not viable. The cause of this must be sought in the defective formation of the brain or in the circumstance that they can respire only by the mouth. The malformation often co-exists with hydrocephalus, but rarely with anencephaly. He mentions as monstrosities which sometimes accompany cyclopia, malformations of one or both ears, increase in the number of fingers or toes, inverted distortion of the hands or feet, shortening or fusion of the limbs (sympodia), incomplete development of the genital organs, occlusion of the anus, and hare-lip.

Fixation of the Scapula.—Lane ("Brit. Med. Jour.," May 19, 1888) calls attention to the circumstance that in complete flexion of the shoulder joint the scapula is rendered fixed by the coracoid process impinging upon the lower surface of the clavicle, and that while the shoulder joint is completely flexed the humerus may be rotated, completely adducted, and very extensively abducted without having the scapula accompany it in its movements.

The Anconæus and its Nerve.—Dr. Brooks ("Brit. Med. Jour.," April 14, 1888) makes the point from analogies drawn from the comparative anatomy of reptiles, and also from the condition actually found in two out of four human subjects, that the anconæus should be regarded rather as a part of the extensor carpi ulnaris than of the triceps, and that the "nerve to the anconæus" originally took a large share in the innervation of the muscles on the extensor aspect of the forearm.

The Medio-tarsal Joint.—Mr. Bishop ("Brit. Med. Jour.," May 26, 1888) upholds the view that this joint is of the ball-and-socket variety, the ball being the head of the astragalus, the socket being formed by the scaphoid, the os calcis, and the ligaments connecting them, the calcaneo-cuboid articulation being entirely excluded. This view is opposed to that held by certain orthopædic surgeons that the joint is a transverse

articulation passing straight across the foot at the level of the astragalo-scaphoid junction and including the calcaneo-cuboid joint. The arguments he brings forward are the conformation of the bones themselves, the mode in which the various bones are united by ligaments, the method of insertion of muscles into the various bones of the foot and the absence of any muscular attachment to the astragalus, the movements of the various segments of the foot upon one another, and the position of the various bones in certain deformities.

The Homology and Innervation of the Axillary Arch and the Pectoralis Quartus.—Birmingham seeks to establish these points (*ibid.*): The pectoralis quartus is a segmented portion of the pectoralis major and is supplied by the internal anterior thoracic nerve. The *Achselbogen* (axillary muscular arches) are supplied by the internal thoracic. The lateral cutaneous nerve of the thorax is the nerve of Wrisberg associated with more or less of the internal thoracic.

A Pulmonary Artery with Two Valves.—Dr. Foot ("Dub. Jour. of Med. Sci.," August, 1888) reports a case of this rare anomaly. The patient had suffered for a long time from disease of the aortic valves, but the absence of the third pulmonary valve did not seem to be the result of disease. It was rather a congenital formation, as was shown by the equality in the size of the valves, the mesial position of the corpora Arantii, and the absence of any ridge on the arterial side of the valve or of any rudimentary frenum at the bottom of the valve-pocket. The absence of the third valve had not given rise to regurgitation, as the right ventricle was not hypertrophied. It was associated with no other malformation of the heart.

The Anatomy of the Eye.—The following summary of the results obtained by Berger regarding the normal anatomy of the posterior chamber and the suspensory apparatus of the lens is given in the August number of the "Dublin Journal of Medical Sciences":

1. The posterior chamber is divided into a space free from fibers of the zonula (prezonular), a second containing them (zonular), and a third lying behind the zonula (postzonular).

2. The prezonular is from 0.2 to 0.4 mm. deeper in the ciliary depressions than in the ciliary elevations.

3. From the zonular portion blind offsets extend into the depressions between the ciliary processes, and reach 1 to 1.5 mm. further back.

4. Most of the fibers of the zonula end in the anterior or posterior capsule of the lens; some, however, in the equatorial portion of the latter. The most anterior and the most posterior fibers of this lenticular band are most numerous, so that the latter can be filled with a viscid mass (albumin), (Hannover's canal). Injected air, or a solution of aniline, passes through the lenticular band into the anterior chamber.

5. The postzonular portion of the posterior chamber is of a capillary nature. Its anterior boundary lies 1 mm. inward from the equator of the lens, its posterior one 2 mm. from the ora serrata. Its anterior wall is formed by the fibers of the zonula or the posterior ones of the lenticular band, respectively; its posterior wall partly by thickened vitreous tissue, partly by fibers of connective tissue (ligamentum hyaloideæ capsulare). Very delicate, reticulated fibers pass through the postzonular portion; it rarely contains rigid fibers of the zonula.

6. A postzonular (Petit's) canal is formed by detachment of the vitreous produced by an exudation (cyclitis, staphyloma bulbi, glaucoma), or it results from changes after death, or it can be produced by injection. Numerous "rigid" zonular fibers are visible in Petit's canal only in eyes in which putrefaction has begun, or they are the result of an imperfect injection.

7. The posterior portion can be injected with a viscid mass like albumin, or with air, but not with a solution of aniline. When albumin is used, however, it also enters the lenticular bands. The belief is wrong that by injection of the zonular portion of the chamber a "canal godronné" can be produced, the anterior wall of which is formed by the lamina vitrea of the pars ciliaris retinae.

8. The outer layer of the vitreous is united in the form of a circle, with the posterior capsule of the lens forming a postlenticular capillary space.

Movements of the Ankle Joint.—Lane ("Jour. of Anat. and Physiol.," April, 1888) attempts to demonstrate that the descriptions of the anatomy and of the movements of the ankle joint, as taught at present

by the best authorities, are erroneous. The best authorities are represented in his article by quotations from the last edition of Quain's "Anatomy." Firstly, he describes a ligament not noted in the work mentioned, which he has named the superior internal calcaneo-scapoid ligament. "It is attached to the inner aspect of the sustentaculum tali behind, and in front to the inner surface of the tuberosity of the scaphoid, and to the whole of the posterior margin of the upper surface of that bone. One portion of this ligament lies internal to the head of the astragalus, and another portion above its head. Its posterior margin receives the insertion of the deltoid and superior astragalo-scapoid ligaments, these being attached but indirectly to the scaphoid." The fibers in the vertical portion are directed upward and forward; those above the head of the astragalus run outward and forward. The part of the ligament which is in relation with the inner surface of the head of the astragalus is frequently a quarter of an inch thick, cartilaginous, and gritty on section. The tendon of the tibialis posticus lies on the inner surface of this ligament. The inferior calcaneo-scapoid ligament is a much less important structure. Its fibers are directed inward and forward, the inner margin being parallel to and in contact with the lower margin of the ligament just described, with which it is often continuous. The os calcis is connected with the scaphoid by a capsule complete everywhere except above and externally, the superior astragalo-scapoid ligament filling in the interval between the superior internal and the external calcaneo-scapoid ligaments. The fibers of this capsule are arranged very obliquely to the antero-posterior axis of the head of the astragalus, so that if the scaphoid is rotated by raising its tuberosity, the longitudinal extent of the ligaments connecting it with the os calcis is diminished, while, if the scaphoid is rotated in a reverse direction, their antero-posterior measurement is increased.

When the tibialis posticus contracts, the astragalus is displaced a little upward and backward, and at the same time the os calcis is drawn inward and upward with the scaphoid. This traction is transmitted to the adjoining bones and occasions a slight separation of the cuboid and os calcis, which causes, by means of the long plantar ligament, an increase in the convexity of the outer arch. It also produces an increased convexity of the inner arch and a movement of the arches inward around an axis passing forward, inward, and downward through the astragalus. This movement he terms "adduction of the longitudinal arches, or of the foot, upon the astragalus."

Lane maintains that the description given by Quain of the upper and outer articular surfaces of the astragalus is incorrect, and that the deductions drawn from it are equally erroneous. "To describe the articular surface of the astragalus more accurately, one should describe a triangular area as being cut off from the posterior and outer part of its upper surface. This portion looks obliquely backward, outward, and slightly upward. The apex of the triangle is directed forward and corresponds to a point considerably in front of the center of the outer margin of the upper surface of the bone, its inner margin passes obliquely backward and inward to the posterior limit of the articular surface, while its outer boundary is formed by the prolongation directly backward of the outer margin of the tibial facet." This triangular facet is produced by the habitual pressure of the ligaments upon the bone in flexion of the ankle joint.

As the ankle joint passes from flexion to extension the astragalus does not move in an oblique, but in a vertical plane, because in extension the astragalus is separated by an interval from the inner malleolus. The astragalus is not fixed immovably as regards the possibility of rotating it in a horizontal plane solely by the strain exerted by the ligaments connecting the tibia and fibula, but this fixation depends on the great strain sustained by the back part of the deltoid ligament and by the posterior fasciculus of the external lateral ligament.

Another point which he alleges has escaped the notice of other anatomists is a prominence on the posterior aspect of the astragalus which presents a concavity that comes in contact and articulates with a corresponding surface on the tibia in complete extension of the ankle joint. In fact, he says, if the ankle joint is carefully examined while it is in a position of very complete extension, neither the tibial facet on the upper surface of the astragalus nor the facet on its inner surface is in contact with the corresponding tibial facet, but the astragalus articulates

with the tibia solely by the concave facet on the upper surface of the prominence on its posterior surface. The interval between the opposing surfaces of the tibia and astragalus while in this position is occupied by a synovial fold which contains fat and projects from the posterior surface of the anterior ligament of the ankle joint.

In a lesser degree of extension portions of the upper and inner facets on the astragalus come into contact with their corresponding surfaces on the tibia.

He thus describes the fixation of the bones of the joint: The head of the astragalus can not be displaced inward, owing to the strain exerted upon it in an outward and backward direction by the anterior fasciculus of the external lateral ligament. It can not be displaced outward, on account of the strain exerted upon it by the anterior portion of the deltoid ligament in a backward and inward direction. The fibula is fixed immovably upon the astragalus by the strain exerted in an inward, downward, and forward direction by the anterior fasciculus of the external lateral ligament, and in an inward, backward, and upward direction by the posterior fasciculus of the same ligament. The fibula is fixed upon the tibia directly by the ligaments which connect them, all of which are rendered tense by the tractions exerted upon the outer malleolus by the two fasciculi of the external lateral ligament, and indirectly by means of the fixation of the astragalus upon the tibia. The flexor muscles and the peroneus longus and brevis assist in fixing the fibula upon the tibia when the body is retained erect upon the fully extended foot.

The Depth of the Cortex of the Kidney.—Little ("Jour. of Anat. and Physiol.," July, 1888) gives, as the result of examinations of twelve kidneys selected from subjects who died from accident or from diseases other than renal, the cortex of the kidney as having an average depth of four lines, or one third of an inch. In no case was the measurement so low as two lines, and in none so high as six. In the great majority it was very close to four lines.

Miscellany.

Messrs. Mariani & Co. announce that they have moved to No. 52 West Fifteenth Street, where they will be happy to receive members of the medical profession.

The Health of Michigan.—The secretary of the State Board of Health announces that during the four weeks ending September 29th diphtheria was reported from twenty places, scarlet fever from twenty-four, typhoid fever from thirty-five, and measles from seven.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 5th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending September 15th corresponded to an annual rate of 17.7 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Wolverhampton, viz., 13.4, and the highest in Norwich, viz., 26.2 in a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 3 deaths in Manchester, 2 in Brighton, 2 in Portsmouth, 2 in Salford, and 2 in Sheffield.

London.—One thousand three hundred and thirty-one deaths were registered during the week, including measles, 27; scarlet fever, 24; diphtheria, 18; whooping-cough, 31; enteric fever, 12; diarrhoea and dysentery, 122; choleraic diarrhoea, 1. Diseases of the respiratory organs caused 184 deaths; different forms of violence, 61; and 15 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.2 in a thousand. In greater London 1,671 deaths were registered, corresponding to an annual rate of 15.8 in a thousand of the population. In the "outer ring" the deaths included diarrhoea 34; diphtheria, 7; fever, 5.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending September 15th in the sixteen principal town districts of Ireland was 18 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 5.2, and the highest in Waterford, viz., 25.5 in a thousand. In Dublin 131 deaths were registered, including measles, 1; enteric fever, 1; scarlet fever, 3; diarrhoea, 8; whooping-cough, 3; dysentery, 2; varicella, 1.

Scotland.—The deaths registered in eight principal towns during the week ending September 15th corresponded to an annual rate of 16 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 10.1, and the highest in Paisley, viz., 26.1 in a thousand. The aggregate number of deaths registered from all causes was 405, including measles, 4; scarlet fever, 4; diphtheria, 3; whooping-cough, 7; fever, 8; and diarrhoea, 29.

Buenos Ayres.—One thousand one hundred and eighty-eight deaths were registered during the month of June, including confluent small-pox, 70; diphtheria, 108; and enteric fever, 22.

Santander, Spain.—Seventy-three deaths were registered during the ten days ending September 30, 1888, including "typhoid diseases," 3; quinsy and diphtheritic diseases, 3; and dysentery, 1.

Trapani, Italy.—One hundred and twenty-four deaths from small-pox (all children) are reported for the month of August, 1888.

Palermo, Italy.—The United States consul, in transmitting abstract of bills of health for the month of August, 1888, states that "deaths from small-pox have not been reported, but nevertheless deaths have occurred therefrom in Palermo during the month."

Batavia, Java (August 11th).—The United States consul writes as follows: "I have the honor to inform you of the presence of cholera and small-pox in this city and the port of Soerabaya, and in the interior. Sporadic cases, such as those under consideration, are of yearly occurrence, and therefore little fear is entertained by the medical authorities that the disease will become epidemic, though great stress is now laid by them upon the importance of vaccination and upon the use of water from the artesian wells of the city water-works in preference to that from any other source. It is impossible to state the number of cases, as there are no boards of health, and the information obtained from the city physicians and overseers of the quarters for Asiatics and natives is unreliable. It may be mentioned in this connection, however, that about a dozen patients have of late received treatment at the hospital here, some of the cases resulting fatally, while nearly two dozen huts among the native dwellings in the European quarter, to which the diseases are at present confined, have been marked with the red flag. Such precautions as the means at their command, and the indifference, carelessness, and fatalism of the natives permit, are being taken by the authorities to prevent the spread of the diseases; and no cases have as yet been reported among the densely crowded populations about the port. Advices from other ports are still more uncertain, and consequently little attention is paid to the matter on the part of the community."

Martinique.—The United States consul, in his dispatch dated September 10th, states that "in the two weeks preceding the 4th of September there were in the island only 47 cases of small-pox and 7 deaths therefrom. Four sporadic cases of yellow fever have made their appearance here during the past two weeks, 3 from imprudent exposure to sun on the part of Dutch sailors, and 1 by contact with said sailors in the hospital here, the latter being an English sailor suffering from another malady. One of the Dutch sailors has since died, the others being now pronounced out of danger."

Port au Prince, Hayti.—The United States consul, in his letter dated September 17th, states that "four men on the French sailing-vessel Providencia, that is said to have brought yellow fever here, died. Three men died belonging to a German vessel. The British brig Evvria left here for Gonaïves, and two of her crew died there. These cases are said to have been yellow fever. I received a note the 14th inst, from an officer of the United States steamer Galena, dated Kingston, Jamaica, the 7th inst., stating that her Majesty's steamer Ready had arrived at Kingston that morning with two cases of fever on board (I presume it meant yellow fever), and that the Atlas steamer Alvena, from the coast of Hayti and direct from this city, where she remained a few hours only, had been quarantined there. I have delivered a clean

bill of health to-day to the Dutch steamship Prins Orange, Nassau, from Amsterdam, via Curaçoa and other ports, arrived here yesterday and bound directly to New York city, because, if there be any cases of yellow fever here, they are two or three isolated ones only, and at the French hospital. Otherwise the city and surroundings are healthy at present, and there appears no suspicion of contagious diseases whatever."

Havana, Cuba.—Twelve deaths from yellow fever are reported for the week ending September 14th.

Cardenas Cuba (September 21st).—Good health prevails in town and harbor.

Santiago de Cuba.—The United States consul in his dispatch dated September 22, 1888, states that "the health of the town is good, and there is not one single case of yellow fever within its limits. The port, notwithstanding a number of Spanish gunboats remaining here at anchor for indefinite periods, has not recorded one single case of contagious disease this whole summer. The military hospital, outside of city limits, contains a number of cases of yellow fever. Mere boys are brought here from Spain as recruits. Very often they are hired out to do hard work in sun and rain, and when they get intermittent fever are put in yellow-fever wards in the military hospital, and necessarily succumb to the disease. Seventeen cases are recorded there this week—one case an American, who has died at Juragua Mines, 22 kilometres from this city. These mines export ore to the States—Philadelphia and Baltimore."

Colon.—The United States consul, under date of August 31st, states that "it is almost impossible to obtain particular data. The official report of burials during the month is 60. In July it was 59. This is maximum this year, and indicates a mortality of about 3.5 per cent. during the year. The sanitary condition of Colon improves yearly and very much. The prevailing diseases are pernicious or malignant, remittent, and intermittent fevers. Two cases of yellow fever, not original in this consular district, but brought here from the line of the canal. One case fatal, the other not."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.
Paris	Sept. 15.	2,260,945	855	..	..	1	..	16	1	18	13
Glasgow	Sept. 15.	545,678	169	..	..	..	..	..	3	2	..
Warsaw	Sept. 8.	444,814	310	..	..	4	..	..	14	10	..
Calcutta	August 11.	433,219	163	..	..	1	..	..	..	..	..
Calcutta	August 18.	433,219	183	5	..	1	..	..	..	..	..
Rome	August 4.	391,188	203	..	..	..	..	1	..	1	..
Amsterdam	Sept. 15.	389,916	147	..	..	..	..	1	..	2	..
Munich	Sept. 1.	278,000	173	..	..	..	..	..	1	5	..
Munich	Sept. 8.	278,000	162	..	..	..	..	..	4	5	..
Palermo	Sept. 8.	250,000	69	..	..	..	..	..	2	1	..
Belfast	Sept. 15.	227,022	77	..	..	..	..	..	2	2	..
Bristol	Sept. 1.	226,510	50	..	..	..	..	..	2	..	..
Genoa	Sept. 15.	179,787	87	..	..	3	2	..	..	1	..
Trieste	Sept. 8.	154,500	77	..	..	4	..	..	..	1	..
Toronto	Sept. 22.	130,000	18	..	..	..	..	..	..	..	..
Stuttgart	Sept. 15.	125,510	32	..	..	..	..	..	1	..	..
Bremen	Sept. 8.	122,000	40	..	..	..	..	..	1	..	..
Havre	Sept. 8.	112,074	76	..	..	..	..	8	..	..	..
Pernambuco	August 28.	110,000	61	..	..	..	..	1	1	..	..
Leghorn	Sept. 16.	101,854	26	..	..	..	..	..	..	..	..
Mayence	Sept. 8.	65,802	34	..	..	..	..	..	1	..	..
Maracaibo	August 18.	40,000	16	..	..	1	..	1	..	..	..
Maracaibo	August 25.	40,000	15	..	..	..	..	..	..	..	..
Maracaibo	Sept. 1.	40,000	13	..	1	..	..	1	..	..	..
Callao	August 25.	34,000	25	..	..	..	..	..	..	..	..
Curaçoa	Sept. 15.	25,000	5	..	..	..	..	..	..	..	..
Vera Cruz	Sept. 13.	23,800	14	..	..	1	..	..	..	..	..
Vera Cruz	Sept. 20.	23,800	26	..	1	..	..	..	..	1	..
Gibraltar	Sept. 9.	23,631	5	..	..	..	..	..	..	..	..
Kingston, Can.	Sept. 21.	16,216	3	..	..	..	..	..	..	..	..
Cape Haytien	Sept. 15.	15,000	9	..	..	..	..	..	..	..	..
Turk's Islands	Sept. 19.	5,000	5	..	..	..	..	..	..	..	..

UNITED STATES.

Buffalo, N. Y.—Passed Assistant Surgeon Wheeler reported, under date of October 3d, as follows:

At the present time there are 22 cases of small-pox in the city pest-house under treatment. Total number of cases to date is 69, and the number of deaths 17. The city authorities are making a house-to-house inspection in the infected district, and the people are being generally vaccinated.

Ship Island Quarantine Station.—The following report has been received from Passed Assistant Surgeon H. R. Carter (September 30, 1888):

I have the honor to report the arrival last evening of the Spanish bark Maria, of Bilboa, at this station with 3 cases of yellow fever aboard. Said vessel left Havana on the 17th instant for Mobile, Ala., and was not allowed to enter that port, as she had sickness aboard.

The men were taken to hospital this morning, it being inadvisable to move them during the storm of last night. One of the cases is convalescent, and was doubtless mild. It is but fair to state that Acting Assistant Surgeon Lehman does not coincide with me in the above diagnosis, holding them "suspicious cases."

Jackson, Miss.—Dr. Wirt Johnson, Secretary State Board of Health, telegraphed:

September 29th: "No new cases for six days; no deaths for fifty-eight hours ending this 6 P. M. Total cases to date, 14; deaths, 5."

September 30th: "No new cases for seven days; no deaths for three days."

October 3d: "Situation unchanged. Total cases to date, 14; deaths, 5. Light frosts are reported by several parties this A. M."

Tampa, Fla.—Dr. J. P. Wall, President of the Board of Health, in his report dated September 26th, states that "for the week ending to-day I have seen 7 cases of yellow fever. One death in Tampa on the 24th instant, making 4 deaths in all since the first indigenous case appeared, on the 7th of August."

Palmetto, Fla.—Dr. Wells reported 20 cases at Palmetto, and 3 deaths during Friday and Saturday. The remaining sick doing well.

Gainesville, Fla.—Dr. J. A. Carlisle, Secretary Board of Health, telegraphed:

September 29th: "Major Gruelle died to-day. One new case, a niece of Major Gruelle, died to-day. We shall need aid in a few days. We want nurses now, but can not get them."

September 30th: "One other new case yesterday; no deaths. Fever is not yet epidemic, although 3 cases have occurred other than members of the Gainesville guards. They are traceable to direct infection. Our expense for guards in isolating cases is large, and we shall require some aid to pay the same. Instruct how to obtain the money."

Way Cross, Ga.—Assistant Surgeon Magruder telegraphed, September 30th: "Reliable report of one case yellow fever at Callahan. Will stop all baggage unless otherwise ordered."

Dr. Posey has been ordered to proceed to Callahan.

Camp Perry, Fla.—Surgeon W. H. H. Hutton reported as follows: September 29th: "Morning report: Present—officers, 6; guards, 11; employees, including carpenters, 56. Refugees arrived, 11; discharged, 26; remaining, 146. Fever camp, 6. Can accommodate 250 extra now."

September 30th: "Present—officers, 6; guards, 11; employees, 56. Refugees arrived, 8; discharged, 19; remaining, 135. Fever camp, 7—4 sick, 3 convalescent. The weather in the past 24 hours has been too cold for comfort. The arrivals during the past week have been fewer than the discharges. The capacity of the camp has been nearly doubled in every way, in anticipation of refugees from Gainesville and Fernandina. None have come, owing, we understand, to refusal of Callahan to allow them to pass that point. In spite of her shot-gun quarantine, Callahan now has the fever, and asked last night if we could take 15 refugees to-day. Wired them we could, if they would allow our train to stop for them to-day. Have completed a depot 25 by 30 at switch, for storage of baggage—fumigated by Dr. Wise. Of the 550 people arrived so far, we have had 13 cases of fever only, and 1 death—a remarkable result, highly creditable to the officers in charge of the fever hospital."

October 3d: "Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 20; discharged, 18; remaining, 138. Unable to leave, but discharged, 65. Fever camp 5, all convalescent."

October 4th: "Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 32; discharged, 2; remaining, 168. Remaining unable to leave, 65. Total, 293. Fever camp, 5, all convalescent."

Jacksonville, Fla.—Dr. J. Y. Porter, in charge of Government relief

measures, telegraphed October 3d: "New cases to-day, 72; deaths, 6—total cases reported, 2,895; deaths, 270. Patients: St. Luke's Hospital, 22; Sand Hills Hospital, 25. Took charge of fumigating of houses, date from 1st."

Fernandina, Fla.—Surgeon J. W. Ross, United States Navy, telegraphed October 3d: "For 24 hours ending 6 P. M., 1 death; no new cases. One new case at Callahan."

The wires being down, no telegrams were received from Fernandina during the week preceding October 3d.

October 5th: "Much more sickness here, principally among negroes, than is thought or reported. Howard Association has no more means than necessary for care of sick and needy; number of latter large and increasing."

The following circular has been issued concerning certain articles of freight not requiring fumigation:

THE TREASURY DEPARTMENT,
Office Supervising Surgeon-General, M.-H. S.,

WASHINGTON, D. C., October 1, 1888.

To medical officers and sanitary inspectors,

United States Marine-Hospital Service:

Oranges, lemons, and limes, unless packed in towns known to be infected by yellow fever, will be passed without fumigation.

Cigars and leaf-tobacco will also be passed without fumigation.

JOHN B. HAMILTON,

Approved: Supervising Surgeon-General, M.-H. S.

HUGH S. THOMPSON,

Acting Secretary of the Treasury.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y....	Sept. 29.	1,537,292	.....	.....	.....	.....	.....	23	10	16	7	21	.....
Philadelphia, Pa....	Sept. 29.	1,016,758	329	.....	.....	.....	.....	21	1	5	.....	5	.....
Boston, Mass.....	Sept. 29.	415,000	187	.....	.....	.....	.....	6	.....	11	.....	.....	.....
San Francisco, Cal.	Sept. 21.	330,000	97	.....	.....	.....	.....	3	1	1	.....	.....	.....
Cincinnati, Ohio....	Sept. 29.	255,139	113	.....	.....	.....	.....	5	.....	2	.....	.....	.....
New Orleans, La....	Sept. 27.	248,000	108	.....	.....	.....	.....	.....	.....	18	.....	.....	.....
Pittsburgh, Pa....	Sept. 22.	230,000	77	.....	.....	.....	.....	8	3	6	.....	1	.....
Pittsburgh, Pa....	Sept. 29.	230,000	76	.....	.....	.....	.....	8	3	2	.....	1	.....
Louisville, Ky....	Sept. 29.	200,000	45	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Milwaukee, Wis....	Sept. 29.	195,000	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minneapolis, Minn.	Sept. 29.	180,000	44	.....	.....	.....	.....	5	.....	4	.....	.....	.....
St. Paul, Minn....	Sept. 22.	175,000	56	.....	.....	.....	.....	3	.....	1	.....	.....	.....
St. Paul, Minn....	Sept. 28.	175,000	42	.....	.....	.....	.....	3	.....	3	.....	.....	.....
Rochester, N. Y....	Sept. 29.	120,000	33	.....	.....	.....	.....	3	.....	.....	.....	.....	.....
Detroit, Mich....	Sept. 29.	116,340	.....	.....	.....	.....	.....	1	.....	1	.....	1	.....
Richmond, Va....	Sept. 29.	100,000	56	.....	.....	.....	.....	4	.....	2	.....	.....	.....
Denver, Col....	Sept. 28.	96,000	.....	.....	.....	.....	.....	4	.....	.....	1	.....	.....
Columbus, Ohio....	Sept. 29.	93,000	36	.....	.....	.....	.....	5	.....	.....	.....	1	.....
New Haven, Conn.	Sept. 29.	82,000	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Toledo, Ohio....	Sept. 28.	80,000	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nashville, Tenn....	Sept. 29.	65,153	19	.....	.....	.....	.....	3	.....	.....	.....	.....	.....
Fall River, Mass....	Sept. 29.	65,000	29	.....	.....	.....	.....	3	.....	3	.....	.....	1
Charleston, S. C....	Sept. 29.	60,145	37	.....	.....	.....	.....	1	.....	1	.....	.....	.....
Evansville, Ind....	Sept. 29.	53,000	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savannah, Ga....	Sept. 28.	52,827	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lynn, Mass....	Sept. 29.	50,000	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Council Bluffs, Ia.	Sept. 22.	45,000	7	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Portland, Me....	Sept. 29.	40,000	9	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Galveston, Texas....	Sept. 14.	40,000	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Galveston, Texas....	Sept. 21.	40,000	15	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Wheeling, W. Va....	Sept. 29.	35,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
E. Saginaw, Mich.	Sept. 29.	33,000	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Ia....	Sept. 29.	30,084	9	.....	.....	.....	.....	.....	.....	.....	4	.....	.....
New Albany, Ind....	Sept. 29.	30,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Binghamton, N. Y.	Sept. 30.	30,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Altoona, Pa....	Sept. 22.	29,546	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford, Mass	Sept. 22.	26,845	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford, Mass	Sept. 29.	26,845	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ansburn, N. Y....	Sept. 27.	26,000	10	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Haverhill, Mass....	Sept. 29.	25,000	9	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Petersburg, Va....	Sept. 26.	25,000	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson, Mich....	Sept. 29.	22,500	8	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Poughkeepsie, N. Y.	Sept. 28.	22,000	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newton, Mass....	Sept. 29.	21,105	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newport, R. I....	Sept. 27.	20,166	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pensacola, Fla....	Sept. 22.	15,000	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pensacola, Fla....	Sept. 29.	15,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Cigarette-smoking and Malignant Disease of the Throat.—The note of alarm which has been sounded in the lay press as to the supposed baneful effects of cigarette-smoking on the throat would hardly, we imagine, have found any echo except in the "silly season." The only new feature in the question as now raised is the suggestion that

certain foreign cigarettes contain a poisonous material which is apt to cause malignant disease in the tissues to which it is applied. There is no doubt whatever that much of the tobacco sold in this country, especially of the more expensive kinds, is "doctored" to a degree which is dangerous to health, but the evil wrought thereby shows itself more in functional disorder (indigestion, palpitation of the heart, giddiness, etc.) than in organic disease. Such local mischief as is caused by smoking depends on the irritation which the heat and the more or less acrid fumes of the tobacco exert on the delicate parts with which they are brought in contact. If cigarettes are more hurtful in this way than cigars or pipes, we are disposed to think that the cause is to be found, not in any "unclassified alkaloid" which they may contain, but in the greater number of them which can be smoked, and in the free manner in which the smoke is inhaled. It is not so much the strength of the irritant as its continuous application which is likely to produce chronic changes in the lips, tongue, or throat, which may eventually become cancerous. Moreover, the really artistic performer with the cigarette is not satisfied unless he brings the smoke habitually into contact with parts—such as the larynx, trachea, and the upper part of the pharynx—which the grosser fumes of the pipe or cigar are very seldom allowed to reach, and then, as a rule, by accident. Again, cigarettes are largely indulged in by many who are intolerant of tobacco in any other form, and who are therefore, it may be presumed, more liable to any ill effect which the "herb nicotian" can produce. Much more convincing evidence than is forthcoming seems to be required to justify the condemnation of Egyptian or Turkish cigarettes as causes of cancer. On the whole, the hygienic alarmist is, perhaps, "too much with us," and the cry of "Wolf!" if too often raised about doubtful or trifling evils, is likely to lead to disregard of the warnings of science on matters of graver import.—*Brit. Med. Jour.*

THERAPEUTICAL NOTES.

Salicylate of Bismuth.—According to Ehring ("Arch. f. Kinderheilkunde"; "Gaz. hebdomadaire de médecine et de chirurgie"), this salt is indicated in the gastro-intestinal catarrh of infants, by reason of its astringent and antiseptic properties. On account of its slight solubility, it should be given mixed with glycerin or some mucilaginous vehicle. Ehring has used it in two hundred cases of infantile diarrhoea, with very diverse results. The cases were those of dyspepsia, acute or chronic gastric catarrh, intestinal catarrh, and dysentery. Under the influence of the remedy the evacuations lose their pathological character, and the urine shows the salicylic reaction. Constipation following diarrhoea does not contra-indicate the use of the drug.

Parthenicine.—According to the "British Medical Journal," this name has been given to an alkaloid obtained by Dr. Ulrici, of Cuba, from the leaves and flowers of *Parthenium hysterophorus* (*artemisia, escoba amarga*). It is a crystalline substance, intensely bitter, and poisonous to animals, and seems to have antipyretic, antiperiodic, and analgesic effects on man. It has been given to the amount of fifteen grains daily.

A Remedy for Thirst in Diabetics.—To allay the thirst suffered by diabetic patients, Duchesse ("Med. Obs."; "Memorabil.") recommends from two to three teaspoonfuls daily of a solution of 4 parts of phosphate of potassium in 150 of water.

A Surgical Soap.—Dr. A. Reverdin, of Geneva ("Rev. méd. de la Suisse Romande"; "Progr. méd."), is impressed with the importance of an antiseptic soap for surgical purposes. He uses a soap made according to the following formula, which is his modification of one employed by Professor Bottini, of Milan:

Oil of sweet almonds.....	72 parts;
Soda lye.....	24 "
Potash lye.....	12 "
Sulphocarbonate of zinc.....	2 "
Essence of roses.....	9½ "

This soap is said to be very agreeable and to have excellent cleansing and disinfectant properties.

Plaster-of-Paris Dressing for the Navel.—Having made many comparative trials of various ways of treating the navel of new-born infants, Dr. F. Fagonsky ("St. Petersburg. med. Woch."; "Internat. klin.

Rundschau") concludes that the use of plaster of Paris is to be preferred, both as preventing putrefaction and as hastening the separation of the stump of the funis. Antiseptic precautions are taken in dividing the cord, the parts are washed, the umbilical ring is powdered with gypsum, and the stump of the funis is wrapped in cotton containing a small quantity of gypsum.

An Ointment for Scabies.—"Lyon médical" attributes the following formula to Kaposi:

Beta-naphthol.....	15 parts;
Lard.....	100 "
Green soap.....	50 "
White chalk.....	10 "

To be rubbed upon the affected parts twice a day.

ANSWERS TO CORRESPONDENTS.

No. 228.—There are no characteristic visceral lesions.

No. 229.—Six months in each grade.

No. 230.—An apparatus which will probably answer the purpose is made by the Cambridge Scientific Instrument Company, St. Tibbs Row, Cambridge, England.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

NEURASTHENIA :

ITS DIFFERENTIATION AND TREATMENT.*

By LANDON CARTER GRAY, M.D.,

PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE NEW YORK POLYCLINIC.

FUNCTIONAL diseases of the nervous system have been largely held in contempt unless they were fortunately accompanied by such startling phenomena as the loss of consciousness and convulsions of epilepsy, the pain of neuralgia, or the undeniable and often violent muscular contractions of chorea. The medical world has no heredity of training in nervous disease. For centuries medical writers and teachers have called attention to the phenomena that could be studied in the pulse, in the heart, in the tongue, in the fæces, in the temperature of the body; and within a few generations these and kindred details have been made the language of a more precise diagnosis of thoracic and abdominal diseases. But nervous diseases constitute a modern study. We may date them back really to the fifties, when the great French school began its career; and it is only within a very few years that the medical schools of the United States have even thought of having a chair specially devoted to this branch of medicine. So it is that, while tens of thousands will be prompt in detecting the first signs of deviation from the normal in the pulse-beat, in the respiration, in the tongue, in the facies, in the urine and fæces, there are scarcely tens—and these only with some special education—who will recognize the primary symptoms of organic or functional nervous disease. And hysteria, that handy limbo of the unexplained, like the zealot's ready hell of Byron, is always so near, and its portals so widely and invitingly open! Yet all attentive observers of disease, more especially those engaged in neurological study, could not help observing many phenomena that could not be classified; and this, I think, is the explanation of the enormous success that the writings of Dr. George M. Beard upon neurasthenia have had in Germany—indeed, it may be affirmed that he has started a literature in that country, the contributors to which are such well-known writers as Arndt, Krafft-Ebing, Erb, Westphal, Moebius, Seeligmüller, Strümpell, and Langstein. As far back as 1828, C. Brown, of Glasgow, had described what he called spinal irritation, and in 1860 Bouchut had written fully upon what he described as "l'état nerveux"; each of these writers had had his followers to some extent; but Beard, it may be said, was the first one to boldly formulate the proposition that there was a wide-spread condition of functional nervous disease for which he proposed the name of neurasthenia,† and for whose maintenance and prevalence and varied phenomena he battled with the most alluring and picturesque of pens. It is curious, nevertheless, that the Germans themselves do not seem to admit that it is frequent among them, but al-

ways fall back upon Beard's assertion that America is the home of the malady. The general feeling, in this country at least, is, I think, that the term neurasthenia, as defined by the writers upon the subject, embraces entirely too much. I share in that feeling myself. The fact seems to have been forgotten that there are already a number of well-studied functional nervous diseases, as well as that each one of these has symptoms correlated with it, and that no scientific advance is made by jumbling together the symptoms of these various and differently acting diseases under one vague name. Then, too, it should not be forgotten that the nervous tissue stands pre-eminently alone among tissues of the body in the highly important fact that its wide-spread ramifications carry its influences into every tissue, and in turn carry back to it the influences of every tissue, so that, much more than is the case with any other organ, the nervous system is peculiarly at the mercy of reflex disturbances. Excluding, then, vicious habits, reflexes from non-nervous organs, and well-recognized functional disease, the question arises: Is there such a thing as nervous weakness, or neurasthenia? I believe there is. But I also believe that it is much more limited in its prevalence than is maintained by the eager followers of Beard.

There may be said to be, in my opinion, three forms of neurasthenia:

1. Reflex neurasthenia.
2. So-called lithæmic neurasthenia.
3. Simple neurasthenia.

1. The neurasthenia that results by reflex from non-nervous organs and vicious habits is, in my experience, the second most frequent form, and can often only be recognized by a very careful examination of the different organs of the body. The very essence of a reflex disturbance is its caprice, so that no one set of symptoms can be relied upon, as a rule, to be indicative of a pure reflex. There are, to be sure, some seeming exceptions to this statement, as in the occipital pain of nephritis, the uneasiness at the vertex in uterine disease, etc., but clinical experience has taught me that these vaunted localizations of pain are of very little practical value. I know of no shorter way of determining this important question than by an examination of the different organs, especially the kidneys, the eyes, the nasal organs, the heart, the liver, the stomach, the genitalia, and also the habits.

2. *Lithæmic Neurasthenia*.—This form—the most frequent of all, I think—was first described by Dr. Murchison in his Croonian lectures in 1874, and had been somewhat vaguely outlined some six years previously by Dr. Austin Flint under the name uricæmia, and quite a literature has grown out of the subject. Three years ago I wrote at some length upon this particular type, and my subsequent experience has served to confirm the views which I then maintained. The salient characteristics are the vertigo, the *tinnitus aurium*, the subjective feelings of numbness, furri-ness, tingling, and occasional slight anæsthesia, together with nervousness, vaso-motor disturbances, insomnia, and sense of distress in the head. The vertigo is both subjective and objective, although it is generally of the latter

* Read before the Section on Practice of the New York Academy of Medicine, October 16, 1888.

† From *νεῦρον*, a nerve, and *ἀσθένεια*, weakness.

kind. Patients reel suddenly when walking, or, when sitting in a chair, they may feel a sudden vertiginous sensation, the latter often so pronounced as to simulate the vertigo of Ménière's disease. There is no accompanying loss of consciousness, but there is often a sudden, sharp, and marked impairment of it. The vertigo is of short duration. It may come without the slightest apparent reason, or it may have many exciting causes, such as fatigue, mental or physical; special articles of food; sometimes a few glasses of hock or a single glass of Burgundy or champagne; tobacco, especially cigarettes; or slight strain to the ocular mechanism of accommodation. Purgatives and salines, perhaps relieving the other lithæmic phenomena, may increase the vertigo, although this increase is usually temporary unless the purgation is extreme, or the laxative is continued so long as to depress the general nervous system. This vertigo may continue for months. Its severity and obstinacy are at times remarkable, and such as to try the nerves of the most resolute. Usually there is no true headache; simply a sense of distension and fullness about the head. Nervousness, next to the vertigo, is the most frequent of the symptoms, and may be accompanied by irritability of temper. This nervousness and irritability of temper will often be beyond the control of those who have usually a strong will; and this is much more apt to be the case in those whose volitional power is normally feeble, so that in these latter the effect is too often taken for the cause, and hysteria is diagnosed. The tinnitus aurium may be due to the underlying nervous condition, or it may be caused by pharyngitis obstructing the orifice of the Eustachian tube, and Sir James Paget has described a peculiar reddish and glazed appearance of the fauces in the gouty, as if they were smeared over with glycerin. Flushings and pallor of the face, sensations of heat and cold, are very common. With these symptoms, too, may be associated various forms of neuralgia and pseudo-neuralgia, as I prefer to call certain vague aching pains. Other nervous disturbances may be present, but those which I have enumerated are the characteristic ones.

3. *Simple Neurasthenia*.—By this I mean a set of symptoms which, to my mind, constitute the symptom-group of a true neurasthenia. In a general way, it may be said that the functions of the nervous system are below par. The patient complains of weakness, either mental or physical, or both; and any exertion is apt to be attended by symptoms of irritability of the nervous system. An overworked business man will come complaining of incapacity for his work, and that when he attempts to force himself to perform his professional duties he will have a sense of cerebral fullness, or sharp pain at the vertex, or a sense of confusion, or an inability to exert those finer mental qualities which he has possessed in the past. The celebrated author, Washington Irving, who wrote one of his later works against time, used to complain that his head felt like a sponge squeezed dry at the end of a particularly hard day's work. Or a woman may come to you, exhausted by household cares, parturition, the anxieties of a family, and complain of a continual weariness, so that she is obliged to

spend most of her time reclining upon a couch. Some of these patients may seem robust, well nourished, healthy in appearance to those who look upon the cutaneous surface as the sole criterion of the health of the tissues of the body. Others may be pale, wan, emaciated, taking little nourishment, perhaps unable even to retain nourishment. These are more or less prominent conditions of true nervous exhaustion, of which we see temporary analogues in convalescence from various diseases. The cerebral form of exhaustion is perhaps least familiar to general practitioners, but those who deal with mental disorders are perfectly acquainted with it, for the constant difficulty after recovery from the curable insanities is that patients are apt to become so much discouraged for a long time with their inability to perform any sustained mental labor. Of course, any person whose nervous strength is impaired, from any cause whatsoever, is liable to erratic nervous manifestations, simply because of the weakness. Every physician is familiar with this fact, and has seen it exemplified in the hysterical weeping of strong men in hospital wards, in the nervous tremblings, in the flushings of the face, and in a thousand and one different ways. So that one would expect to find symptoms of nervous irritability even in these cases of pure neurasthenia; and we do find them, but not nearly so often as one would expect, or as in the reflex and lithæmic neurasthenias. We should, however, bear in mind that the hysterical, hypochondriacal, or neurotic individual may become the subject of a genuine neurasthenia, and then it may become a very nice question to determine the relative proportion causatively of the predisposing neurosis and the true neurasthenia. Nevertheless, I wish to lay great stress upon the fact that most cases of the true neurasthenia which I am attempting to describe are not complicated with true hysteria or hypochondria, although there may be occasional emotional disturbance and considerable anxiety about the condition of health, as is very natural.

The cause of the reflex neurasthenia is to be sought, of course, in the reflecting organ or the vicious habits. The ætiology of the lithæmic form is very obscure, but the more I see of it the more convinced do I become that it bears some relationship to a condition of malexcretion, because a large proportion of the cases occur in individuals whose urine will be found to contain large quantities of the amorphous urates and uric acid, and whose stools are defective in quantity and proper bilious coloring; because many of these individuals are of rheumatic diathesis, and the English writers state that abroad these patients are generally of gouty predisposition; because the treatment can never be successfully conducted, as I shall endeavor to show later on, unless careful attention is paid to remedying this defect of malexcretion; because some simple cases will end in perfect recovery with no other treatment than this; and because the cases often follow an attack of malaria, or occur in malarious individuals at malarious seasons of the year. But the nervous symptoms are often in utter disproportion to the defective excretion, in others the nervous symptoms are greatly aggravated by purgation, and in most severe cases the nervous symptoms persist long after the malexcre

tion has seemingly been overcome. It is impossible, therefore, to determine, in the present condition of our knowledge, whether the nervous symptoms of this lithæmic form are due to the mal'excretion, or whether the mal'excretion is due to the nervous symptoms, or whether both are effects of some underlying cause. Almost all the simple forms of neurasthenia that I have seen have had as a cause overwork, mental or physical, or great anxiety, or great emotion.

In making a diagnosis of these three forms of neurasthenia—the reflex, the lithæmic, and the simple—we should first ascertain as to whether there is any lesion in a non-nervous organ sufficient to set up the nervous symptoms presented to us. I should far transcend the proper limits of a paper like this if I were to go into the details of this examination for reflex causes, although I hope to do so at some time in the near future. Suffice it to say that we should always regard with suspicion marked errors of refraction, tangible evidence of nephritis, nasal obstructions sufficient to interfere with the proper passage of air through the nasal cavities, distinct ovarian or uterine disease, or cardiac lesions.

We should be especially careful not to be deceived by any of the vicious habits, such as morphinism, alcoholism, chloralism, possibly cocaineism, sexual excesses, masturbation, sodomy, etc.

Having carefully excluded these reflex causes, we can proceed to the diagnosis between the lithæmic and simple varieties.

The diagnosis of the lithæmic form can usually be made by the peculiar vertigo, tinnitus aurium, nervousness, sense of fullness about the head instead of headache, and the various aberrant sensations—such as tingling, numbness, furri-ness, etc.—as well as by the frequent association with these symptoms of a furred and coated tongue, defective stools, and urine containing large amounts of uric acid. Having in turn excluded the reflex causes and the lithæmic form, the diagnosis of the simple form can readily be made, although it is often possible to do this by the very simplicity, so to speak, of the symptoms of nervous exhaustion.

All these forms of neurasthenia should be scrupulously differentiated from the early symptoms of certain nervous diseases—as certain non-insane delusional conditions, generally associated with hysterical tendencies, such as *folie de doute* (fear of contamination), and other morbid fears; melancholia; general paresis of the insane; certain mild chronic insanities; hysteria, migraine, and angina pectoris, and neuralgic symptoms associated with these maladies; the early stage of locomotor ataxia; Bennett's muscular hypertonicity; progressive muscular atrophy, especially of the neurotic form; or the nervous symptoms of plaintiffs in damage suits.

The non-insane delusional conditions which are illustrated by the various morbid fears can not properly be classified with neurasthenia, because they belong to the insanities, and very few of the individuals subject to them can be regarded as of perfectly sound mind by any one who has much experience with them, and they are very often associated with downright mental aberration. We can scarcely regard as perfectly sane a woman who washes her hands every ten minutes through the day for years, as one of my patients

did because of her fear of some mysterious contamination, or a man who can not cross a bridge, or one who has certain fixed and morbid fears entirely without any real basis—indeed, in many of these patients the delusions are as fixed as in the well-marked types of insanity. We should, I believe, term these cases functional insanities.

It is by no means so rare as one would expect to find cases of general paresis diagnosticated as neurasthenia. The early symptoms of that gradual, insidious, remittent, generalized interstitial encephalitis that we call general paresis of the insane are often so fugitive and changeable that it is scarcely to be wondered at when their true significance is occasionally overlooked. The characteristic early symptoms, let me remind you, consist of unequal pupils, fibrillary tremors of the tongue and facial muscles, slight difficulty of articulation of certain letters (as of *d*, *t*, and *r*), slight changes in mentality, often partaking of the nature of some expansive delusion, and of occasional, often widely separated, paroxysms of tremor, flushing of the face, thickness of speech, and slight defects in walking. It is very common to find both physicians and friends overlooking or palliating the significance of these symptoms. Indeed, it may sometimes become necessary to have the patient under observation for some time before the diagnosis can be made, as the above enumerated symptoms are often fugitive and remittent in character.

Many cases of simple melancholia are unaccompanied by illusions, delusions, or hallucinations, and simply manifest, especially in the early stage, the melancholic tendencies, which are usually distinguished from hypochondria with ease, because in hypochondria the patient is querulous, seeking new remedies and new physicians, the disease lasting usually many years, whereas melancholia comes on in a few weeks, the simpler forms have an average duration of about a year, the patient is utterly indifferent about himself, and has a peculiar facies of mingled suspicion and woe, to which may be added, in the course of the disease, an expression of bewilderment. The organic suicidal impulse, liable to develop in even the mildest cases of melancholia, makes the differential diagnosis from neurasthenia one of immense practical importance. I have known of several instances in which this was not done until the patient committed suicide.

In some forms of insanity running a very mild and chronic course it is possible to confound the symptoms with those of neurasthenia, especially when the hallucinations or delusions are concealed. I am always very suspicious of any patient coming to my office alone, and complaining of symptoms of cerebral exhaustion.

There are certain families in which migraine or sick headache is found in several successive generations, especially in the female members. Not infrequently in these individuals losses of consciousness will take the place of the migraine, so that the two functional affections may be interconvertible, as I pointed out a number of years ago; in others, associated with the migraine there may be symptoms simulating mild angina pectoris; others still may occasionally have marked hysterical symptoms. In some few very neurotic individuals of this class, indeed, the nervous symp-

toms may run the gamut of these and other various forms of functional disturbance. All the individuals of this group are usually possessed of great nervous energy, and some of the finest mental work of the world is done by them. It is a great mistake to confound these symptoms with those of neurasthenia, although persons of this class may have neurasthenia. I have never been able to satisfy myself, however, that they are any more subject to this latter malady than less nervous people.

The early stage of locomotor ataxia is sometimes confounded with neurasthenia. Physicians are not generally aware that the early symptoms of this disease are usually of a purely sensory nature, and that ataxia belongs to a later stage. The lightning and stabbing pains, severe, sudden, seldom fixed in any one part of the body; the peculiar pupil described by Argyll-Robertson, contracted, irresponsive to light, only feebly responsive to movements of accommodation; loss of patellar tendon reflex; the gradual atrophy of the optic nerve—these early symptoms of locomotor ataxia have been overlooked and the vague discomfort of the patient mistaken for neurasthenia.

About a year ago Dr. Hughes Bennett described to the Neurological Society of London an interesting species of disease for which he suggested the name of muscular hypertonicity, and which might very readily be confounded with neurasthenia, as I have no doubt that it has been. The symptoms consist of a very gradual onset of weakness, usually in one or both lower extremities, occasionally also affecting the upper extremities, and which may go on increasing for many months or years. Associated with this weakness is excessive contraction of the muscles when they or their tendons are percussed. Dr. Buzzard, in the discussion upon Dr. Bennett's paper, stated that these patients usually had no plantar reflex or a very weak one, and that in some few of them he had observed a partial optic atrophy of simple character, accompanied by some amblyopia.

It is by no means unusual, in my experience, to see cases of progressive muscular atrophy confounded with neurasthenia. Modern observation, more particularly in the last ten years, has done away with the old doctrine that progressive muscular atrophies commenced in the thenar and hypothenar eminences. As a matter of fact, most of them begin in the muscles of the limbs, the shoulder girdles or the trunk, and it is sometimes a very difficult matter to determine as to whether there is an actual atrophy. Thus, when the patient complains of a vague loss of strength and vague aching pains, such as are apt to occur in the neurotic forms of muscular atrophy, it might be very easy to overlook the real malady unless the patient were stripped and the different muscles keenly observed.

The nervous symptoms often manifested by plaintiffs in damage suits are a peculiar mixture of hysteria, hypochondria, and nervousness, usually consisting of general nervous irritability, exaggerated reflexes, marked vaso-motor phenomena, emotional disturbances, depression of spirits, mental irritability, slight losses of memory, and other slight functional symptoms. Leaving aside altogether the question of malingering, and carefully excluding any possible organic disease, we may positively affirm that these cases

will quickly recover when the source of their anxiety has been removed and they are enabled to obtain some mental rest.

The prognosis is variable in each of these forms of neurasthenia. The purely reflex form will end in recovery, as a rule, when the reflected cause is removed. The lithæmic form will vary in prognosis according to the severity of the nervous symptoms and the time of the year when the first symptoms show themselves. If the nervous symptoms are slight, the recovery is usually speedy. If the nervous symptoms are severe, and especially if the vertigo is marked, the duration of the disease may be prolonged through a year, even with treatment, and the vertigo may last several years. Relapses are not infrequent. Warm weather has a markedly unfavorable influence upon the nervous symptoms—so much so that I have never known severe nervous symptoms, beginning in the spring or early summer, to disappear until cold weather made its appearance. The simple form of neurasthenia has usually an excellent prognosis if radical treatment is adopted; otherwise recovery is a matter of chance, and I have known cases that I believed to be of this form pass into a gradual and fatal exhaustion. Dr. Webber states that marked disturbance of the arterial tension is of evil prognosis, and *vice versa*; but I have not as yet been able to test this point myself.

The treatment of the reflex form is simply to remove the reflecting cause, if that be possible. The therapeutic measures to be adopted in the lithæmic variety are more complicated. If the nervous symptoms be slight, a laxative, a mineral acid, and some slight regulation of the diet will be quite sufficient. The purgative which I like best is the cascara sagrada, of which I use the fluid extract, and which I like because the dose can be increased and decreased according to the needs of the case, without any griping or unpleasant effects to the patient. I usually instruct my patients to commence with a drachm three times a day, and increase or diminish this dose until they are having one or two easy liquid stools in the twenty-four hours. Violent purgation is absolutely hurtful in this form, and will usually increase the nervous symptoms, as I have already mentioned. Calomel, so much vaunted by some of the earlier writers upon this subject, is a very uncertain remedy except in the slight relapses which are apt to occur after the first symptoms have been brought under control. The best mineral acid, I think, is the dilute nitro-hydrochloric, twenty drops, three times a day before meals in a wine-glass of water. The regulation of the diet may be either by cutting off meat entirely for a few days, or by cutting off all starchy foods for the same time. Singular to say, some patients will be benefited by one of these dietetic extremes, whilst others will be improved by the other, and it is largely a matter of experimentation as to which to employ, although the habits and the season of the year may be some guides; for instance, a person who is accustomed to a highly nitrogenous diet may not stand well the change to a starchy one, and usually the warmer the weather is, the better the patient will bear a deprivation of meat. Whatever the dietetic regulation is, however, it should not be extreme except for a short period of time. As a rule, it is advisable to diminish per-

manently by at least one half the amount of starchy food these patients may be taking. If the nervous symptoms are severe, and especially if the vertigo is marked, laxatives, mineral acids, and dietetics will be of minor importance in the therapeutics. For the vertigo itself I know of no remedy except time, which always cures it, although it may do so very gradually. If there be considerable weakness associated with other symptoms, the remedy of remedies is rest, which should be absolutely in bed if necessary, or proportioned to the needs of the case. There is far more danger in too little rest than in too much. I am perfectly aware that in this view I am greatly at variance with most of the writers upon the subject, but some little experience in these matters has caused me to stand where I do. It is my custom, in severe cases of this type, to put the patients absolutely to bed for a week or two, and then gradually to put them upon their feet in the course of another week or two, and then to permit them to attend to their business by going to and from their place of business in a carriage, passing from the carriage to bed. In the less severe forms it may only be necessary to greatly restrict the individuals' expenditure of energy by forbidding them to walk, and having them rest on a sofa or in bed through the evenings. When the nervous symptoms are slight, or when the patient has largely convalesced, a radical change of air is often of great benefit, but in obtaining it fatigue should be avoided, as in long walks or drives or journeys. The largest number of the cases which I have seen have been in dwellers in seaboard cities, and these patients are usually not benefited by the sea-shore, but must be sent inland, preferably to a moderate elevation. Whether the dwellers of the inland would be benefited by a trip to the sea-shore is a matter in which I have had only a limited experience. Sometimes a sea voyage or a European trip will be of benefit, although this is usually the case only in the stage of convalescence or when the nervous symptoms are slight. What I have ventured to term the simple form of neurasthenia is benefited most by the treatment advocated by Dr. Weir Mitchell of rest, massage, and forced feeding. These patients should be put to bed, first placed upon a milk diet, to which gradually increasing amounts of food should be added, massage and large doses of iron and malt extract should be given, and the muscles should be gently faradized. Rest of this kind continued for a period of eight to twelve weeks will usually add ten to forty pounds to the patient's weight, and any anæmia will be overcome. But the delicate point of the treatment is to maintain this improvement, as in some cases the patients will soon relapse into their former condition. To avoid this, great care should be exercised in putting them on their feet again, as well as in impressing upon them the necessity of great moderation in exertion for months after the treatment has been completed. Patients who have been thus treated are very apt to be greatly disappointed when, having gained so much weight and color, they find themselves incapable of much exertion on first getting out of bed, and it is difficult to convince them that muscular strength will gradually return. In all these forms of neurasthenia, and particularly in the convalescent or slighter forms of the lithæmic and simple

types, I have found spinal galvanism of considerable value as a general tonic. It should be applied by means of large electrodes, 5 × 6 inches, one in the nape of the neck, the other in the lower dorsal spine. The current should be measured by a measuring instrument—the milliamperemeter—and should at first be about 5 milliamperes in strength, and should then, as the patient becomes accustomed to it, be gradually increased to 10, 15, or even 20 milliamperes. The sittings should be about five minutes in duration, every second day, for a period of six to eight weeks, when it will be best to intermit the electrical treatment, even if it is resumed afterward. I have very little faith in massage in the lithæmic or simple neurasthenia, unless a patient with the latter form is put to bed and subjected to forced feeding, when it is an invaluable adjunct in the treatment. Usually, however, it weakens and irritates the patient.

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CLINICAL OBSERVATIONS OF DISEASES OF THE TESTICLE.*

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THE following cases which have come under my care seem to me worthy of being reported, because they have some clinical and diagnostic features which are interesting and which may perhaps be suggestive of discussion. It is possible, also, that one or more of them will help to make still clearer the question of ætiology of affections of the testicle. For, while admitting the possibility of cases being caused by "reflex irritation," I believe that, under the light of modern pathological teaching, the theory of "metastasis" is no longer tenable, and that by far the greater number of cases of inflammation of the testicle are due either to direct injury or to the extension of inflammation from the prostatic urethra through the vas deferens. For several years it has been my custom to examine by the rectum the prostate and vesiculæ seminales of those afflicted with disease of the testicle, as well as to examine the seminal cord wherever and as far as it was within reach—*i. e.*, from the testicle to and within the inguinal canal. My experience has been to rarely find the seminal vesicles involved, excepting in tubercular disease, but usually to find more or less tenderness (definite complaint being elicited from the patient) of the corresponding side of the prostate gland, and often a slighter density, if not a distinct swelling, of that side. It was this experience which led me to object to castration in one of the cases reported in this paper, and, tentative treatment being adopted, the diagnosis was cleared up and the patient relieved by the passage of a calculus.

Not long since a married man, aged forty-seven, was sent into St. Luke's Hospital as a case of "strangulated hernia," and came under my care. On admission, his history and condition, as condensed from the records made by the house surgeon, were as follows: He was an unintelligent laboring man, and stated that for about nine months he had had obscure and dull pains in the right groin which he attributed to "rheumatism."

About two months before entering the hospital a "lump" appeared in this region. At first it did not disturb him or attract his attention very much, but, as it gradually increased in size and became painful, he sought medical advice. Under some form of treatment the tumor disappeared, but reappeared after a week. For three months past he has been unable to work, the tumor has been continually present, and the pain, which had of late greatly increased in severity, had been distinctly located in it.

In the right groin and projecting somewhat below it was a small tumor of about the size of an egg. It was tender on palpation and flat on percussion, gave an impulse on coughing, and was non-reducible. The scrotum on that side was empty, and the patient said that he never had had a testicle there, but just at the lower extremity of the above-described swelling was apparently a testicle which seemed to form a portion of the tumor. The tumor and the adjacent parts were so sensitive that a positive differential examination could not be made. Inasmuch as there were no evidences of strangulation and as the patient's

general condition was fairly good, it was deemed best to treat him expectantly. Rest in bed and an ice-bag to the tumor were accordingly prescribed. A week later, the inflammatory conditions having subsided, the tumor was still non-reducible and almost indefinable, but it was evidently composed of more than one part, one portion being an inguinal hernia and the other probably an undescended testicle. The patient being etherized, an incision was made directly over the tumor and the tissues were carefully divided until an irregular mass was found lying in the inguinal canal. The tissues and the tumor were so amalgamated by old and recent inflammatory deposits that the tumor was separated with great difficulty, but its lower extremity was found to be a cyst, which, being laid open, was demonstrated to be a true hydrocele of the tunica vaginalis. Further careful dissection made clear the component parts of the tumor. On the inner side of the inguinal canal was found a small omental hernia, its sac being formed by a prolongation of the peritonæum covering the cord. The larger mass of the tumor was a pulpy and degenerated testicle, in a state of resolving inflammation. The cord proceeding from its upper and posterior part was of double its normal size and indurated, and, as far as it could be followed into the abdomen, was found to be in this condition. The omental hernia was reduced, and the cord, having first been seized high up in the inguinal canal by hæmostatic forceps, was divided and the testicle removed. As the vas deferens was cut, a little spurt of pus-like fluid was seen to take place from its canal. Unfortunately, this escaping material was lost, being washed away by the irrigation, which was very thorough, but it was so manifest that the bystanders saw it easily and commented upon the probable future condition of the wound. The stump of the cord was ligated with silk and stitched into the upper part of the inguinal canal by catgut sutures. On the following day, while inspecting his dressings, I found that the patient had a distinct purulent discharge from his urethra. The discharge was greenish in color, could be expressed from the whole length of his urethra, and was so abundant as to soil to a very noticeable extent the exterior of the dressings. The patient denied that he had had any disease, and would not even admit exposure. No evidence of any urethral disease had been seen by myself or the house surgeon at the repeated examinations to which the patient had been subjected prior to the operation. The urethra was ordered to be irrigated regularly twice daily with a solution of 1 to 40,000 of the bichloride of mercury. Suffice it to say that the patient did well, and a month later was discharged from the hospital entirely healed.

The interesting features of this case naturally present themselves. In the first place, the question of diagnosis was not a simple one. The symptoms, objective and subjective, were those of an inflamed, incarcerated hernia. But absence of the testicle from the right side of the scrotum, together with the statement of the patient that he had never had a testicle on that side, would lead to the supposition that it formed a portion of the tumor in the groin, and still it might yet be in the cavity of the abdomen. The diagnosis was not made positive until the operation, because the acute inflammatory process had so united the tissues that the separate parts of the tumor could not be distinguished without dissection.

The second interesting feature to which I ask your attention is the condition of the cord and the escape from its canal of fluid looking like pus. This fluid had the appearance of pus both as to color and consistence. It escaped from a tube which at the time was swollen and

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting, September 19, 1888.

hardened by inflammatory action, as was proved by the fact that after the operation the portion of the cord left in the upper part of the inguinal canal gradually softened and disappeared. In my own cases of castration and in those which I have witnessed I have never seen such an escape of fluid, nor can I find record of any. In view of these facts and of the further one that on the following day the patient had a distinctly purulent discharge from the urethra, I shall assume that the fluid was pus. Upon this point, and also upon the relation of the urethritis to the other conditions, I should like the experience of the association. Did the orchitis precede the urethritis? Or, was the urethritis the primary disease, which abated, as is well known it usually does on the appearance of the complication, only to reappear after the subsidence of the latter? My own opinion, based upon the stage of the inflammation of the cord as contrasted with that of the testicle and upon the fact that the urethritis was distinctly purulent without any intermediate stage (both together implying an affection of some duration), is that the man had had a urethritis which, with characteristic tergiversation, he had denied. An examination of the urethral pus for gonococci might have thrown some light upon this part of the question, and it was ordered to be made, but I find none recorded in the history. An interesting if not valuable scientific observation, therefore, seems to have been lost.

The following case is presented as a type of chronic inflammation due to prolonged irritation of the prostatic urethra, complicated by hydrocele of traumatic origin:

This patient was a young and healthy mechanic, aged nineteen, whose family and personal history was very good and who was entirely free from venereal disease of any kind. Between four and five years ago, while lifting a heavy weight, he "strained" himself, and immediately felt a sharp pain in the right testicle, which at once began to swell. The pain was intense, compelling him to take to his bed, and it lasted acutely for several days. The swelling, more persistent, slowly diminished, and disappeared entirely at the end of four months. He was then perfectly well, and remained so until about three months prior to his coming under my care, when a heavy weight fell upon him across the upper part of both thighs and striking his scrotum. A few minutes later he experienced pain in both testicles, and they began to swell. The pain disappeared in three days, while the swelling slowly increased, that of the left being greater than the right and extending up into the groin. About a month before the taking of this history a small "pimple," as he described it, appeared on the base of the scrotum, opened spontaneously, and has continued to discharge up to the present time. As long as he can remember he has had attacks of frequent urination whenever he has "taken cold," being obliged to urinate as often as every hour. At such times he has a burning sensation in the urethra, and when the bladder is full a slight burning pain over the pubes. A day or so after coming under observation he had a sharp, stinging pain in the glans penis. On examination, he had double hydrocele, that of the left side being the greater, but the fluid was not enough to interfere with the examination of the testicles. The right testicle was normal, while the left testicle was double its proper size and tender. Its epididymis was indurated, irregular, and somewhat knotty, and the whole testicle gave the impression of an irregularly indurated organ with intervening soft spots. The left cord up to and within the in-

guinal canal was moderately enlarged and indurated. At the lower portion of the left side of the scrotum, somewhat anteriorly, was the red and everted opening of a sinus from which exuded a thin pus. The fluid in the tunica vaginalis was moderate in quantity, and the patient's sufferings were due entirely to the condition of the left testicle, in which he complained of great pain. *Per rectum*, the prostate was sensitive, particularly in the median line and upon the left lobe. The latter was somewhat thicker than normal, and light, gentle pressure upon it from the tip of the finger caused the patient to wince. In order not to weary you with detail, it may be briefly stated that, in spite of being kept in bed and of all treatment, his condition did not change much, but followed a very chronic and relapsing course. Rest in bed, applications of ice, etc., did relieve the acuteness of his pain and seemed to reduce the swelling somewhat, but both would increase again, especially if, under the impression that he was getting well, he moved about any.

He then passed under the care of another surgeon, who, in view of the sufferings of the patient, the character of the enlargement of the testicle, the sinus, and the chronicity, felt warranted in making a diagnosis of tuberculosis, and proposed castration. I dissented from this opinion. It seemed to me that there were two elements in this case which, if considered separately, would oppose such a diagnosis, and therefore not justify so heroic a measure as castration. One was the chronic hydrocele due to a traumatism, which may or may not have been also the exciting cause of the orchitis. On the latter point the patient's history was not clear. The other was the relapsing and chronic condition of the left testicle. Admitting, for the sake of argument, that the traumatism *was* the cause of the onset of the inflammation, why should the latter persist, and at times with intensely acute exacerbations? It was true that many of the objective symptoms pointed to tuberculosis, and, as is well known, the latter may even excite acute inflammation in the organ in which the deposit is taking place. But against the tubercular hypothesis were (1) the definite enlargement of the cord thus early in the history of the patient's disease (and, moreover, it was not nodular); (2) the frequent exacerbations and the *acuteness* of the pain as contradistinguished from that of tuberculosis; (3) the symptoms detected by examining the rectum were those only of inflammation of the left side of the prostate and prostatic urethra, and there was none of the knotty induration of the seminal vesicle which is frequent in tubercular disease; and (4) the long history of occasional attacks of frequent and painful urination prior to the injury, together with pain in the glans penis. In view of these facts, I expressed the opinion that the cause of the state of the testicle would be found in the prostatic urethra, and advised further tentative procedures, and a more careful exploration for stricture, or for any other of the known causes of irritation of the deep urethra. It was evident that this irritation had been of sufficient grade and long enough continued to excite a localized pus formation in the testicle, with subsequent discharge of the pus through the above-mentioned sinus.

A few days after, the patient passed through the urethra, with great straining and pain, a mulberry (?) calculus half an inch long by a quarter of an inch wide. This produced another acute attack of pain, etc., in the testicle, which subsided in three

days. After this the patient steadily improved, and when I saw him, two months later, there was some fluid in the tunica vaginalis, which I aspirated. The testicle was nearly normal as to size. The sinus had closed spontaneously, leaving a line of induration in the tissues of the scrotum leading to a corresponding nodule in the testicle, and there was still a slight amount of thickening of the epididymis.

It is possible that some surgeons would be inclined to classify the foregoing case among the so-called "pseudo-tubercular,"* but I think that the discovery of the cause—*i. e.*, the *calculus*—proves it to be a simple chronic orchitis. By way of emphasis, permit me to narrate briefly one other case similar in some of its details, but strongly contrasting in its final outcome:

This patient was also a young mechanic, aged twenty-seven, and free from any cardiac, pulmonary, renal, or specific history. He had been married for five years and had one healthy child. In the early part of 1885, while at work, he was struck on the right testicle by an iron clamp. He says that the testicle "swelled" to double its natural size. It was not painful (excepting for the first few moments after the blow), nor did it interfere with his working, but it was somewhat in his way, incommoding him slightly in locomotion. It remained in this condition till the middle of 1886 (over a year), when it became slightly painful, and increased slowly in size till he came under my observation in February, 1887. After carefully eliminating, as far as possible, all other disease, the diagnosis of chronic hydrocele was made, and several ounces (eight) of fluid were aspirated. The body of the testicle was slightly enlarged, denser than the left, and tender. The epididymis was in a similar state, and the cord up to and within the inguinal canal was of about double its normal size. There were no nodules and there were no rectal symptoms. A second aspiration was done three weeks later. After this he was free from pain, the testicle apparently became softer and smaller, and, with the exception of the hydrocele, showed no tendency to diseased action. The patient's general condition was better, he had none of the pain in the groin and down the anterior aspect of the right thigh, of which he had formerly complained, and he was able to return to his work, which was very laborious, obliging him to lift ponderous masses of iron. The fluid in the tunica vaginalis rapidly reaccumulated without any evidence of increase in the size of the testicle proper. As the scrotum again came to be of such a size as to interfere with his labor, I sent him into St. Luke's Hospital, and in May, 1887, performed upon him Volkmann's operation for the radical cure of the hydrocele. The wound healed rapidly, and in less than two weeks I permitted him to return to his heavy work. In July there was a sudden and rapid increase in the size of the right testicle, accompanied by considerable pain in it. It measured longitudinally 4 inches by 2 inches laterally, was of an unevenly indurated surface, and tender on pressure. The inguinal and femoral glands of the same side were also enlarged and hardened. The patient's general condition was beginning to deteriorate, and, it being evident that a new and acute condition was now present, he was immediately sent into the hospital again. As my tour of duty had ended, my colleague, Dr. McBurney, removed the testicle, together with the diseased glands in the groin. The wound did not heal well, and in less than a month the patient returned to his work, but not so well nor so strong as formerly. In October of the same year (two months later) his left testicle, without any injury or

known cause, suddenly, and at night while he was in bed, became intensely painful. The pain radiated into the left groin and lumbar region and down the left thigh. He came to me the next morning, looking pale and haggard, evidently suffering greatly, and said that for a week previous to this attack of pain he had noticed enlargement of that side of the scrotum, with dragging pain in it, which was relieved by a suspensory bag. These symptoms had not interfered with his work or general health. I found the body of the testicle, the epididymis, and the cord swollen and tender, and a moderate amount of fluid in the tunica vaginalis. A few days' rest in hospital relieved this acute condition, and, three ounces of hydrocele fluid being aspirated, he returned to his work again. It is not necessary to detail the subsequent events in this case more than to say that the body and epididymis slowly increased in size, and became more or less hard, with intervening soft points, and tender to the touch, and there was a varying amount of fluid in the tunica vaginalis. He is still under observation. His general health is fair and he is able to work at his trade, although he has now evidences of consolidation at the apex of each lung.

It will be observed that in this case also there was a traumatism which excited a hydrocele and a mild grade of orchitis. In the preceding case the latter became subacute, relapsing acutely from time to time, while in the case under consideration the inflammation seemed to be better after the radical treatment of the hydrocele. It persisted in a mild way, nevertheless, and was without any associated bladder symptoms. The physical conditions of the two patients were strikingly alike till later, and, indeed, a prognosis based upon these alone would have been much worse in the case which ultimately proved to be simple chronic inflammation. In the second case, however, the rapid and acute changes which took place two months after the Volkmann's operation were highly suggestive of malignant disease, but the microscopical examination of the testicle and lymphatic glands rendered the diagnosis of *tuberculosis*, which had been made, no longer doubtful.

The following is the report of Dr. Frank Ferguson, pathologist to the hospital:

Incisions in the testicle reveal many cheesy areas which in size are between a pin-head and a walnut. Neither to the unaided eye nor under the microscope can the healthy structure be recognized. A few isolated tubes are indeed seen between the cheesy masses, but they are distorted and crowded out by the inflammatory elements and fibrous tissue associated with the development of tubercles. The cheesy areas present no special features. Giant cells have not been noticed. The bacilli of tuberculosis are abundant.

Another interesting clinical feature in this case seems to me to be in the rapidity of the tubercular process and in the large amount of fluid in the tunica vaginalis, in these respects varying from the ordinary slow and insidious development of this disease.

127 EAST THIRTY-FOURTH STREET.

Reflex Neuropathies.—"The eyes, the ears, the nose, and nasopharynx constitute," says the "Lancet," "sources of reflex irritation leading to the production of various nervous diseases. According to French and German authorities, these sensory areas are very fertile in the causation of headaches, epilepsies, coughs, giddiness, gastralgia, and so forth. Ruault and others assert that a great variety of chronic morbid processes of the nose and naso-pharynx may cause such affections, which are also frequently easily cured by local treatment."

* A term to which I strongly object as meaning nothing, for it is either "tubercular," or it is not, and if something else, it therefore can not be "false" tuberculosis.

CLINICAL NOTES ON THE USE OF ANTIPIRYNE IN THE NASAL PASSAGES.*

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To the numerous reports lately made of the local use of antipyrine as a hæmostatic, an antiseptic, a stimulant to sluggish ulcers, etc., I wish to add a report of its use upon the nasal mucous membrane during the past two months.

Influenced by statements appearing in February † as to the local hæmostatic properties of antipyrine, I had used it in weak solution in several cases of trifling bleeding following operations upon the nose, with questionable success.

In May, 1888, Dr. Roswell Park, of Buffalo, then suffering from an acute coryza, found much relief to nasal occlusion and irritation from a spray of antipyrine in solution. He was led to try it from observing its action upon capillary oozing in experimental operations upon the brains of animals. At his suggestion, I began experimenting with a solution of antipyrine, and have found it of decided service in a limited class of cases. I have been unable to find any record of the use of antipyrine in the nasal chambers heretofore, and may be pardoned, in consequence, a seeming egotism in the expression of my impressions in the matter.

The discovery that antipyrine has, to a certain extent, the retractive effect upon the turbinated tissue possessed by cocaine, suggested its substitution for that drug where the object is to reduce inflammation of the mucous membrane and engorgement of the turbinates. A solution of the strength of sixteen grains of antipyrine to the ounce of water, with a few minims of glycerin, was found, after experiment, to be about as strong as can readily be borne by the nasal mucous membrane, and to be sufficient to produce the desired effect. For brevity, it is alluded to hereafter as a four-per-cent. solution, though in fact slightly weaker.

The first local effect of a spray of a solution of moderate strength is a pungent, burning sensation in the nose, at times with severe reflex pain in the eyes or temples, passing off in a few seconds. This is usually followed by retraction of the turbinated swellings somewhat more slowly than with cocaine. The mucous membrane is not blanched as with the latter, and no perceptible anæsthesia occurs. However, there appears to be a local sedative action, as is seen in certain cases of irritable sneezing, lachrymation, etc.

Antipyrine solutions, in any strength found advisable, do not seem to have the power of reducing extreme swelling of the turbinates, little by little from before backward, possessed by cocaine solutions, but need application over the greater part of the mucous membrane. Hence, in cases of complete and extreme occlusion of either nasal chamber, it has failed when sprayed into the nose. On the other hand, its retractive effect, when accomplished, is more lasting than the effect of cocaine, and no irritative reaction

from it has been noticed, as is often the case with cocaine in acute rhinitis or in irritable states of the nasal mucous membrane.

The advantages antipyrine appears to possess over cocaine are an absence of the disagreeable numbing effect of the latter, and of the unpleasant cerebral stimulation produced upon many by even weak solutions of cocaine. The effects of antipyrine, on the other hand, both local and general, so far as known, are most desirable in cases of this kind. Its sedative action upon the nervous system, when taken internally, is directly indicated.

Lastly, the now recognized antiseptic properties of antipyrine render *a priori* indication for its use in the nose after operations or injuries, in addition to its hæmostatic properties. I have used it under these conditions with apparent advantage; but by how much its antiseptic properties are of service I am not able to state.

The possible advantage of some reasonably non-irritant antiseptic in the earliest stage of acute coryza has perhaps suggested itself to many, and it may be that its apparently successful abortive action in two cases on my note-book may be due to this property.

I may mention in passing that in several cases of acute follicular pharyngitis, and in two cases of amygdalitis, the local spray of antipyrine appeared to assist the internal action of the same drug in allaying inflammation and pain. I have a record of eighteen cases in which antipyrine locally applied has proved of benefit upon some of the lines indicated above, besides others in which it did not appear to be adapted to the conditions demanding relief.

My first applications were in cases of acute coryza. In some of these I have met with disappointment, in others with satisfaction. If the "cold" was of several days' standing, and the inflammatory swelling pronounced, the antipyrine alone has usually failed to give relief. If the attack was in its incipency—the stage of tickling, sneezing, lachrymation, etc.—marked and permanent (two cases) relief followed the free application of antipyrine.

One patient, accustomed to the use of cocaine in similar attacks, at the next call after the use of antipyrine requested the same to be repeated, saying the relief was more prolonged and the subsequent recurrence less severe than after cocaine.

Where antipyrine alone was insufficient, it was found very efficacious combined with a weak solution of cocaine, the former appearing to be synergetic to the latter. Thus, a one-fourth-per-cent. to a one-half-per-cent. solution of cocaine with a four-per-cent. solution of antipyrine was found much more active and lasting in its effect than a solution of cocaine of the same strength used alone. Of course, the temporary relief to the inflammatory symptoms was not more complete than by the use of cocaine—often less so; but the immense advantage was obtained of not producing unpleasant local anæsthesia and of not overstimulating the already irritated nervous system, as is occasionally shown after cocaine by sleeplessness, occipital headache, irritability, etc. Antipyrine presents the additional advantage of not drying the mucous membrane so unpleasantly as cocaine does. However, for severe attacks of acute rhinitis, cocaine gives more

* Candidate's thesis presented before the council of the tenth annual congress of the American Laryngological Association.

† "Medical News," February 18, 1888.

decided and satisfactory results, either alone or in combination in a weak solution with antipyrine.

There is a related class of cases in which antipyrine has been found of excellent service—cases marked by more or less regularly recurring hyperæsthetic conditions, as though a coryza was in its inception, this occurring immediately after rising in the morning, passing away after an hour or more, leaving scarcely a trace behind. A four-per-cent. solution of antipyrine relieved these symptoms promptly in every case, and, used at intervals of four hours, lessened markedly the frequency and severity of the attacks.

In two cases of frequent bleeding from small abrasions about the anterior nares on the muco-cutaneous juncture of the septum, a spray of antipyrine in the hands of the patient was found of service in checking the attacks. Decided hæmostatic effects follow its use in operations upon the turbinates or upon polypus. For this purpose it is not superior to cocaine, but the antiseptic qualities of antipyrine make it a desirable agent to bathe the cut surfaces.

The most interesting cases in which antipyrine has been tried in my hands are four cases of "hay-fever" occurring within the past month. The number of cases is so small, and the time of trial so limited, that much stress can not be laid upon my conclusions; but sufficient results have been obtained to warrant a more extended trial of this method of mitigating the sufferings of these patients when for any reason radical measures are not pursued. A brief epitome of the four cases experimented upon shows well the advantages and limitations of antipyrine for this purpose:

CASE I.—Mrs. B., aged thirty-five. First seen August 9, 1888. Has had periodical attacks for over twenty years, coming on between the 15th and 20th of August and lasting until October, and sometimes longer. The presence of flowers aggravates her attacks, and they cause sneezing if inhaled at any time of year. Is much relieved when she inhales steam, as in the kitchen. About nine years ago had an attack of asthma, but not since. Suffers from nasal obstruction and recurring sore throat at frequent intervals, especially in the spring. Examination of nose showed large, pallid, anterior hypertrophies of inferior turbinates and polypoid degeneration of anterior extremities of middle turbinates on both sides. Septal spur left anterior and inferior. Posterior nares fairly clear and normal. In rapidly successive operations, removed with Bosworth snare the hypertrophies and polyps. Cauterized right inferior turbinate with chromic acid. On August 15th ordered four-per-cent. antipyrine spray. August 24th, slight signs of hyperæsthesia, controlled by spray. On the night of the 27th distinct hay-fever, especially severe on the cauterized side. August 31st, ordered one-half-per-cent. cocaine with four-per-cent. antipyrine spray. This was followed by relief. During first week of September there were occasional attacks of asthmatic breathing. The spray of antipyrine alone was resumed. Since the right side has healed, the nasal symptoms are much less than in any previous year, and readily held in check.

CASE II.—A. E., aged eleven years. First seen August 9, 1888. Hay-fever since four years old, every summer, beginning from 9th to 14th of August. First attack followed a severe "cold" after exposure. Is pale and delicate-looking. There is slight general hypertrophy of the inferior turbinates; pallid hypertrophy of both middle turbinates pressing against the septum, pedunculated anteriorly, presenting an appearance of small polypus. During paroxysms suffers frightfully from nasal

occlusion and severe asthma and coryza. Sits propped up in a chair on pillows day and night. Loses appetite and flesh, and is much debilitated until frost comes. An attack was due on day when first seen, and patient was already weak and was said to be so much prostrated by the paroxysms that, as he lived forty miles away, radical treatment was not attempted. Ordered four-per-cent. antipyrine spray, three times daily, along with malt tonics. August 23d, he had not had cough or asthma as yet, but severe nasal symptoms and lacrymation. One week later patient was reported by a physician, a member of the family, as having a mild attack, able to be about, and improving. A very brief report received. September 9th, reported patient in "glorious health." Unfortunately, a detailed report asked for has not been received in time to embody in this report. Making all allowances for hopeful exaggeration, there has been undoubted improvement in this case, and much relief from very distressing symptoms always present heretofore.

CASE III.—P. B., aged thirty-eight. First seen August 22d. Has had hay-fever seventeen years, every season with great severity, coming on about August 21st. Has all customary symptoms—lacrymation, nasal obstruction, cough, asthma, sneezing, etc.—very severely. Found polypus in left nasal chamber, apparently attached to anterior extremity of middle turbinate. Much hypertrophy of corresponding point on right side, and much congestion and secretion. Surgery not being desired, antipyrine spray was ordered. August 30th, much more comfortable than is customary until previous day. Took a long drive in wind and dust. Severe attack in night. Ordered one-fourth-per-cent. cocaine solution with antipyrine. September 8th, had resumed spray of antipyrine alone, and was fairly comfortable. After renewed exposure to dust on previous day, had severe asthma. This was relieved by sedative inhalations. At last report, though suffering at times severely, is decidedly more comfortable than in previous years.

CASE IV.—Mrs. Van S., aged twenty-five. Examined August 23d. Since 1883 has suffered moderately, at times severely, from "hay-fever," beginning from August 10th to 20th. In 1885 had no attack. In succeeding year it was more severe than before. In 1887 was at sea-shore until September 1st. Was free there, but during her journey home had severe attack, lasting until October. Attack has just begun this year. Has symptoms of hypertrophic nasal catarrh at all times. There are large anterior hypertrophies on both sides. The posterior nares present a fair appearance. Is two months pregnant. Ordered antipyrine spray every four hours, or as needed to allay irritation.

August 28th.—There have been a few attacks controlled by antipyrine.

31st.—Feels almost as though free from attack.

September 7th.—After unusual exposure to dust and heat, has had severe attack.

10th.—Has been quite well, uses spray regularly, and has little more annoyance than at other times of year.

In each of these cases careful attention was given to the general health, and a careful diet enforced. Antipyrine was given internally in doses of two and a half to five grains three or four times daily, to control the reflexes and thus favorably affect the accompanying asthma. This dose was increased if asthma came on.

Bloch* is quoted as reporting a case of hay-fever relieved by large doses of antipyrine internally, but I could notice no direct influence of the antipyrine administered internally upon the nasal symptoms if the local spray was not

* "Medical News," February 4, 1888.

used. A two-per-cent. cocaine solution was instilled into the eyes to relieve itching and smarting, as was found necessary.

Of the four cases quoted, Case I can hardly be considered a fair test on account of the operations preceding the use of the antipyrine. However, in that case, antipyrine spray certainly mitigated the nasal irritation. Cases II and IV illustrate the action of antipyrine most satisfactorily. Though I have been unable to see No. II again, and the reports received are extremely meager and too general for anything like scientific accuracy, yet they were received through intelligent medical sources, and show distinct improvement, though with occasional severe relapses. Case IV, essentially mild in character and in which operative treatment was contra-indicated by pregnancy, received immediate and great relief, continuing with slight interruptions. Case III received some relief of symptoms, but cocaine had to be called in play when the paroxysms were severe, with then only slight relief sometimes. In this case the business and habits aggravated the attack at times. While on the whole the symptoms have been modified and the sufferings abated, so that the patient considers himself more comfortable than in former attacks, yet it appears that in severe and long-standing cases antipyrine will not prove sufficient as a means of relieving symptoms.

The conclusions drawn from the limited experience reported above may be summarized as follows:

1. A solution of antipyrine possesses hæmostatic properties when sprayed into the nose, though not superior to cocaine.

2. Antipyrine in about four-per-cent. solution may be used upon the nasal mucous membrane with temporary relief to occlusion from engorgement of the turbinates, and with sedative effects upon irritable states.

3. It is most effective where the element of irritation exceeds that of inflammation.

4. It presents an advantage over cocaine in not producing local numbness and dryness, and in the absence of the general stimulating properties of cocaine, causing sleeplessness, headache, etc. In cases such as hay-fever, where an agent of relief is used for long periods, antipyrine as a nasal spray is less likely than cocaine to produce constitutional disturbance or to lead to a "habit."

5. Antipyrine presents the disadvantage of causing more or less severe smarting, and of being unequal to the relief of severe inflammation or extreme occlusion of the nares.

6. Its antiseptic and stimulant properties will probably make it serviceable as an application to fresh wounds and to granulations and ulcerations in the nasal chambers.*

7. Combined with cocaine, it increases the local action of the latter, enabling it to be used in weaker solution.

305 DELAWARE AVENUE, BUFFALO, N. Y.

The New York Obstetrical Society has elected officers for the coming year as follows: President, Dr. H. T. Hanks; vice-presidents, Dr. B. McE. Emmet and Dr. H. D. Nicoll; recording secretary, Dr. E. H. Grandin; assistant recording secretary, Dr. A. M. Jacobus; corresponding secretary, Dr. H. Marion-Sims; Treasurer, Dr. J. L. Morrill; pathologist, Dr. H. C. Coe.

* "Medical News," June 23 and September 8, 1888.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 20, 1888.

THE CASE OF THE LATE EMPEROR OF GERMANY.

ADDED to the sorrow felt everywhere at the fatal issue of the Emperor Frederick's illness is the humiliating reflection that the management of his case gave rise to bickerings that the world at large must look upon as nothing short of disgraceful. So long as the quarrel was confined to fragmentary statements and counter-statements, we thought proper to allude to it only briefly and with as little mention of the personal element as possible; and when, some weeks ago, Sir Morell Mackenzie's German colleagues in the case brought out a pamphlet in which grave accusations were made against that gentleman, we refrained from all comment, for it was announced that Mackenzie was about to publish a reply, and it seemed desirable that both sides should be heard before anything like criticism upon the merits of the case was attempted. The affair has now culminated in the publication of Mackenzie's book, and we hope that the special literature to which it has given rise may not be further amplified. There are some questions of scientific interest involved in the controversy, but much of what is to be found in the German pamphlet and in Mackenzie's book serves only to express the writers' angry state of mind, and should be passed by with scant comment.

The pamphlet issued by the German surgeons is entitled "Die Krankheit Kaiser Friedrich des Dritten dargestellt nach amtlichen Quellen und den im königlichen Hausministerium niedergelegten Berichten der Aerzte." It bears the imprint of the Imperial-Royal Printing Office at Berlin, and consists of Professor Gerhardt's report; Professor von Bergmann's exposition; Dr. Landgraf's report; Professor Schrötter's report; Dr. Schmidt's report; a declaration by the physicians (Mackenzie, Schrötter, Schrader, Krause, Schmidt, and Hovell) assembled at San Remo; a narrative (of unmentioned authorship) embodying a letter from Schrader to von Bergmann, Braumann's account of the tracheotomy, Kussmaul's report, and Waldeyer's report; Bardeleben's report; Mackenzie's brief statement of his opinion of the nature of the disease immediately after Frederick's death, with Hovell's expression of concurrence; an account of the autopsy, signed by Count Stolberg-Wernigerode, Mackenzie, Hovell, von Wegner, Bardeleben, Leuthold, von Bergmann, Virchow, Waldeyer, and Braumann; and an account of the post-mortem microscopical examination, signed by Virchow and Waldeyer. The pamphlet contains 103 octavo pages.

Mackenzie's production is entitled "The Fatal Illness of Frederick the Noble." It is published in book form by Sampson Low, Marston, Searle, & Rivington, of London. The title-page bears the legend "Mark now how a plain tale shall put

you down," from Shakespeare's "Henry IV." The entire book was printed in the New York "Sun" last Sunday, including the woodcut illustrations, occupying forty-two closely printed columns of that newspaper.

Although the main features of Frederick's fatal malady are well known, it seems proper to give an outline of its history, as throwing light on matters of opinion; this we shall take from Gerhardt's report, pointing out wherein and to what extent Mackenzie's account differs from it in so far as essentials are concerned. In January, 1887, the patient began to suffer from hoarseness, which did not yield to the usual remedies, and on the 6th of March a laryngoscopic examination was first made, at the request of Generalarzt von Wegner, by Professor Gerhardt. After describing the appearances which he found, Gerhardt states that his first diagnosis was that of polypoid thickening of the left vocal band. Efforts to remove this growth with the snare and the guillotine having proved unsatisfactory, recourse was had to the galvanic cautery, which was employed at first at intervals of a few days, and daily from March 29th to April 7th, inclusive. Mackenzie expresses great horror at the frequency with which Gerhardt applied the cautery, and intimates that nothing could have been better calculated to convert a benign growth into a malignant one, thereby leaving the reader to infer that the ultimate unquestioned malignancy of the laryngeal affection was brought about by Gerhardt's excessive cauterizations. This hardly accords with Mackenzie's subsequent statement that in the Emperor's case the cancer that proved fatal was a distinct growth from the original benign tumor. "The one thing," he says, "which has been added to our knowledge by this sad case is that, in cancer of the larynx, in very rare cases, a *benign growth may co-exist with a cancer.*" The Italics are Mackenzie's. Gerhardt presents a statistical argument against the probability of the conversion of benign into malignant growths. According to Felix Semon, he says, it has been reported to have occurred forty times in 8,300 cases—a proportion so small, he remarks, that the alleged instances are generally assumed to have been cases of erroneous diagnosis. He intimates that, if any such occurrence took place in Frederick's case, it may quite as well have been due to Mackenzie's forceps as to his cautery.

Gerhardt goes on to say that the rapidity with which the outgrowth sprang up anew after the destruction of portions of it with the galvanic cautery, as well as its general appearance and behavior, led him to look upon it as cancerous. Von Bergmann was now called in consultation, and, in view of the possibility that the tumor was cancerous and of the impracticability of its entire removal by the mouth, advised its radical excision by means of thyreotomy (*Spaltung des Kehlkopfes, Laryngofissur*). At this juncture Surgeon-General von Wegner, who seems to have been the patient's family physician, suggested that the opinion of another laryngologist should be obtained, and expressed a preference for Mackenzie. To this Gerhardt and von Bergmann consented, thinking, says Gerhardt, that the laryngoscopic appearances and the clinical history were so clear that no competent laryngoscopist could fail to be of

their opinion. At another consultation, von Lauer, Tobold, von Wegner, Schrader, von Bergmann, and Gerhardt being present, Tobold made a laryngoscopic examination and affirmed that the growth could be nothing but cancer. The others all coincided in this opinion and in von Bergmann's recommendation of thyreotomy. Gerhardt states that this unanimous diagnosis of cancer was based on the rapid reappearance of the growth after destructive cauterization, its hardness and unevenness, the persistence of traumatism at its inner side, the impeded mobility of the vocal band, the certainty that tuberculosis and other infectious diseases could be excluded, and a group of concurrent circumstances peculiar to the case.

When Mackenzie first appeared on the scene, on the 20th of May, he told his German colleagues that the growth did not look to him like cancer, and that he could not accept that diagnosis until a portion of the tumor had been removed and reported upon by a competent pathologist. This was agreed to, and Mackenzie was intrusted with the task of removing a fragment of the growth through the mouth. In his book he shows indignation at the use of the word intrusted (*betraut*), intimating that it implies that he was to act under the German doctors' direction, whereas, as he asserts, they were all incapable of carrying out the procedure. Whatever may be the truth in regard to this insinuation, we confess that we can not accept it as probable, and, moreover, we fail to see anything offensive in the use of the word *betraut*. It was further agreed that whatever was removed should be submitted to Virchow. In pursuance of this plan, Mackenzie removed a piece of tissue. Gerhardt says that he made a laryngoscopic examination immediately afterward, and observed a little loss of substance of the mucous membrane of the upper surface of the left vocal band, near the outer margin of the tumor. The German contention is, as foreshadowed by this statement of Gerhardt's, that neither on this occasion nor on any subsequent occasion of the removal of a piece of the tumor by Mackenzie was the center (nucleus) of the growth represented in the tissue given to Virchow for examination; and that instances occur in which a tumor is cancerous at the nucleus, but shows no malignant structure in its other parts for a time. Therefore, according to the Germans, Virchow's failure to find cancerous tissue in the specimens submitted to him did not invalidate their diagnosis. This seems to us a reasonable contention, and it must be said that Mackenzie is somewhat disingenuous in his manner of meeting it. He gives prominence to the fact, which nobody appears to have doubted, that the fragment removed embraced the whole thickness of the growth, from its surface down to and including the underlying healthy tissue. That, of course, might well be the case, and yet the nucleus of the tumor not have been touched. In the fragment removed Virchow found only evidences of irritative processes and, along with proliferating epithelia, a single nest of epithelial cells in concentric layers, and pronounced the disease to be pachydermia laryngis.

Virchow's reports were made known to the world from time to time as they were rendered. At no time did he pronounce the disease malignant. Although he was careful to

specify that his deductions were drawn only from the specimens submitted to him, he occasionally added remarks of a hopeful nature, the purport of which was that there was no ground to suppose that cancerous disease was present. Mackenzie now says that, if Virchow's statements of facts had not been accompanied by such remarks, the impression they would have made on him would have been in favor of the cancerous nature of the growth. It is contended that Mackenzie ought not to have laid the whole burden of the diagnosis on Virchow. We certainly think he would have been wiser if he had attached more weight to the observations and opinions of his colleagues—men who, however flippantly he may speak of them, are known to be of a high degree of capability. Mackenzie alleges now that he never undertook to cure the patient without an external operation, but Gerhardt declares that, on being asked if he could guarantee to do so, he replied: "Ja, bestimmt," and added, after a pause, "humanly speaking."

As we have before maintained, we think Mackenzie was justified in demanding a microscopical examination and in persisting in the endolaryngeal method of operating so long as there seemed to be a reasonable prospect of thus wholly eradicating a growth which he had much cause to consider benign. However, his persistence appears to have been the unfortunate cause of the bad feeling that sprung up almost immediately between him and his colleagues, for it became bruited about that they had been willing to submit the patient to a dangerous external operation, and that he had come into the case in the very nick of time, bringing with him the sure prospect of cure by comparatively unobjectionable treatment. The German surgeons seem to have felt that this popular view of the matter was due to his machinations, and he appears equally imbued with the notion that they, or some of them, were the source from which the "reptile press" of Germany subsequently drew its inspiration.

The first notable expression of the bad feeling in question that is to be found in the German pamphlet occurs in Gerhardt's account of Mackenzie's second attempt to remove a portion of the tumor. He says that he saw Mackenzie use a strong, sharp forceps, not disinfected; that he noticed that the light from the head-mirror was directed upon the patient's cheek instead of into his mouth; that nothing was brought away in the grasp of the forceps; and that he himself made a laryngoscopic examination immediately afterward, and found both vocal bands highly reddened, the right one being bathed in blood throughout and showing a black-red swelling projecting into the glottis. In other words, he perceived that Mackenzie had attacked the healthy vocal band, instead of the diseased one. The evidence of this alleged injury to the right vocal band is said to have been observed by von Bergmann and Tobold at the next consultation, and is subsequently mentioned several times in the German pamphlet, especially in Landgraf's report. Aphonia of many weeks' duration is reported to have followed this misadventure, and the patient's recovery of a hoarse voice to have been afterward vaunted in England as a triumph of medical art. It is within the bounds of possibility

that even so skillful an operator as Mackenzie may have seized the right vocal band instead of the left one, but it is almost incredible; and it is quite beyond credence—as Mackenzie himself has not been slow to point out—that he should have been able to guide the forceps into the larynx at all while the light from the mirror was thrown on to the patient's cheek.

A full consultation was held on the 25th of May, at which it was agreed that Mackenzie should be allowed to proceed with his treatment until the microscope or some other evidence, such as an increase of the growth, showed the tumor to be malignant. Gerhardt states that he found it increased in size on the 1st of June, and that when, on a subsequent occasion, the German surgeons called Mackenzie's attention to an increase, to its encroachment on the posterior wall, and to the decreasing mobility of the left vocal band, he replied: "I do not see it," but afterward reported from San Remo that this lessened mobility had been observed before in Berlin. On the 8th of June Mackenzie removed two pieces, from an examination of which Virchow pronounced the growth to be *pachydermia verrucosa*, adding that he could not say positively from the pieces examined that this was the nature of the entire tumor. Gerhardt remarks that *pachydermia verrucosa laryngis* can not be found mentioned in literature previously to Hünemann's dissertation, published in 1881, in which the description is founded on pathological anatomy alone, so that practically nothing is known of its clinical history; and he argues, from the clinical standpoint, that Frederick's disease could not be classed under that head.

The progress of the case under Mackenzie's treatment was generally supposed for a number of months to be satisfactory, notwithstanding the fact that the German surgeons adhered to their view of its malignancy and to their conviction that the tumor could not be adequately removed by way of the mouth. After a time, however, disease of the cartilaginous structure of the larynx became apparent, and tracheotomy was resorted to. At this period Mackenzie played for a short time a less prominent part in the management of the case, but he subsequently resumed the chief responsibility. At this stage of the case nothing occurred that calls for mention in this article, except on an occasion when difficulty was experienced in replacing the inner cannula. According to von Bergmann's account of this episode, he received a note from Mackenzie in which that gentleman said: "We have difficulties with the cannula, and I shall be glad if you will see the Emperor with me *as soon as possible*," the note being written in English, and the words "as soon as possible" being underscored. Mackenzie says that this meant only that he was "anxious to proceed to change the tube without delay," having just completed a lead tube which he thought would for the time being prove more satisfactory than the one then in use. Von Bergmann says that, in response to the note, he went at once with his assistant, Brannmann, and found Mackenzie still engaged with a workman in trying to fashion the lead tube, whereupon he showed Mackenzie that he (von Bergmann) had with him a Hahn's sponge-cannula of suitable curve. He states that Mackenzie approved of the tube, and that they hastened together to the Emperor's

room, where they found him sitting on a chair suffering with severe dyspnoea, his cheeks and lips being blue, his inspirations stridulous, his accessory muscles of respiration called into play, and his epigastrium receding with each breath. Von Bergmann says that he hastily removed the sponge from the cannula that he had brought with him, and endeavored to insert the tube, but met with great difficulty from obstruction of the channel by exuberant granulations and from the brawny state of the parts below the wound. The outer cannula previously in use, he says, was at this time resting on the trachea, not within it, and the patient's difficulty in breathing was growing greater and greater. A further attempt to insert the new cannula, the edges of the wound being drawn apart with long blunt hooks, likewise proved unavailing, and he then inserted his finger for the purpose of further clearing the channel. Having done this, he held the wound open with the hooks, and Bramann inserted a cannula of a somewhat smaller curve, whereupon the Emperor at once breathed easily again. He says that the whole procedure was the work of a few moments only, and that but moderate bleeding followed, the sputa returning to their former color in the course of half an hour. He adds that some discharge ran down into the trachea, but was at once coughed out.

Mackenzie's version of what took place on this occasion is quite different. He says that there was no dyspnoea, that he was not in any difficulty, and that he sent for von Bergmann only out of courtesy. He asserts that von Bergmann arrived in a great state of excitement, which he adroitly pictures in such terms as to lead many readers to draw an inference that no ordinary provocation should lead one gentleman to lay another open to. He says that it had been his intention to insert the new tube himself, but that, as von Bergmann seemed to wish to do it, he made no objection. He then describes von Bergmann's forcible attempts, ending, as he asserts, in his forcing the cannula down between the trachea and the overlying parts, leading to free bleeding, fever, and the formation of abscesses. Finally, says Mackenzie, von Bergmann sent for Bramann (who, according to Mackenzie, had been left waiting outside), who, readily inserted a tube while von Bergmann held the hooks. We can no more credit these statements of Mackenzie's than we can believe Gerhardt's story about Mackenzie's awkwardness with the head-mirror, and, of the two, Mackenzie's account is the more discreditable.

In so far as it merits attention, the remainder of Mackenzie's book is statistical. He gives a table of twenty-two cases of thyreotomy for cancer, only two of which resulted in cure. This is enough to show the dangerous character of the operation in the cases in which it has been undertaken, but no information is given as to the patients' condition at the time of its performance. It may well be imagined that many of them were in an advanced stage of the disease, and it would be edifying if we could be furnished with data for comparing the results of thyreotomy in the later and in the earlier stages of cancer. Mackenzie argues against the advantage of the procedure as facilitating the removal of a neoplasm from the larynx,

stating that the opening by which access to the growth may safely be gained hardly exceeds the rima glottidis in dimensions, but he omits all consideration of the facts that the route is a direct one and that the operator can work without being obliged to devote part of his attention to nicety in the management of mirrors. Moreover, he speaks of partial removal of the larynx as the operation that von Bergmann "would probably have found it necessary to perform," as if it were a still more desperate resource, although he subsequently says that it "will probably be found to be much more successful than simple thyreotomy."

It is our conviction that both these publications are to be regretted. The German surgeons are not to be blamed for wishing to put themselves correctly on record, nor for the controversial element in their pamphlet so far as it deals with scientific questions, but it would have been vastly better, we think, if they had omitted all reference to their antagonist's alleged shortcomings as an observer and to his supposed lack of integrity. But Mackenzie has far exceeded them in rancor and recklessness. His book is meant for the general public, and his adroitness as a writer and as a special pleader does not seem to have been held at all in check wherever it was an object to make the worst appear the better part. His story is anything but a "plain tale"; it is a pitiful exhibition of mingled vanity and spite, adorned with a great mass of irrelevant matter. We fear that his reputation will be the worse for it, and it is to be hoped that we shall never again see a medical controversy conducted in such a fashion.

MINOR PARAGRAPHS.

MEASLES IN NEGROES.

DR. LACHLAN TYLER, of Washington, lately read an interesting paper on measles before the Washington Obstetrical and Gynecological Society, which is published in the "American Journal of Obstetrics." He thinks that Ellis is in error in giving the average mortality of the disease as one in fifteen, and that it is really much lower. Among the negroes of the District of Columbia, who make up not more than a third of the population, the mortality, he says, is both relatively and actually greater than among the whites. This, he thinks, plainly demonstrates the potency of insanitary environment in producing death from measles, for the negroes generally live in the utmost squalor.

THE HOAGLAND LABORATORY.

THE trustees of this institution, connected with the Long Island College Hospital, in Brooklyn, announce the completion of the building and its equipment for work. Owing to the temporary absence of the director, Dr. Sternberg, the course of lectures on bacteriology announced to be given by him will be postponed until his return. The services of Dr. George T. Kemp, of the Johns Hopkins University, have been secured as associate in bacteriology and physiology, and with his assistance, under Dr. Sternberg's direction, practical instruction in bacteriology will be given during the winter and spring.

ITEMS, ETC.

The Health of Connecticut.—According to the "Monthly Bulletin of the Connecticut State Board of Health," for the

month of September, in 165 towns there were 1,032 deaths, including 1 from scarlet fever, 5 from cerebro-spinal fever, 31 from diphtheria and croup, 3 from whooping-cough, 53 from typhoid fever, 12 from malarial fever, 11 from typho-malarial fever, 203 from diarrhoea, 112 from consumption, 25 from pneumonia, and 9 from bronchitis.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 16, 1888:

DISEASES.	Week ending Oct. 9.		Week ending Oct. 16	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	43	10	49	14
Scarlet fever.....	72	10	84	19
Cerebro-spinal meningitis....	1	1	2	2
Measles.....	60	9	91	11
Diphtheria.....	67	17	67	22
Small-pox.....	0	1	0	0

Changes of Address.—Dr. William S. McMurdy has moved to No. 367 West Forty-eighth Street. Dr. A. J. Magnin has taken up his residence in Paris, making a vacancy in the visiting staff of the French Hospital.

An Unknown Correspondent, whose address is given as "93 East Fourth Street," is requested to inform us in regard to what city he lives in.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 7 to October 13, 1888:*

MAUS, LOUIS M., Captain and Assistant Surgeon, by direction of the acting Secretary of War, is relieved from duty at Fort Schuyler, N. Y., and will report in person to the commanding officer at Fort Porter, N. Y., for duty at the post. Par. 10, S. O. 236, A. G. O., Washington, October 10, 1888.

SPENCER, WILLIAM G., Captain and Assistant Surgeon, by direction of the acting Secretary of War, is granted leave of absence for two months. Par. 11, S. O. 236, A. G. O., Washington, October 10, 1888.

DAVIS, WILLIAM B., Captain and Assistant Surgeon, by direction of the acting Secretary of War, is granted leave of absence for six months. Par. 12, S. O. 232, A. G. O., October 5, 1888.

BANISTER, JOHN M., Captain and Assistant Surgeon. By direction of the acting Secretary of War, the leave of absence granted in S. O. No. 210, September 10, 1888, from this office, is extended one month. Par. 2, S. O. 232, A. G. O., October 5, 1888.

Death.

MEACHAM, FRANK, Major and Surgeon, died at Fort Douglass, Utah, October 9, 1888, at twenty minutes past 1 p. m.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 13, 1888:*

BATES, N. L., Medical Inspector. Detached from the Pensacola, and placed on waiting orders.

FARWELL, W. G., Surgeon. Ordered to the United States Revenue-Steamer Franklin.

SCOTT, H. B., Passed Assistant Surgeon. Detached from the New York Navy-Yard, and ordered to the Naval Hospital at Mare Island, California.

MAGRUDER, A. F., Surgeon. Ordered to duty at headquarters of the Marine Corps.

Society Meetings for the Coming Week:

MONDAY, *October 22d*: Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore, Md., Medical Association.

TUESDAY, *October 23d*: Virginia State Medical Society (first day—Norfolk); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private); Medical Society of the County of Putnam (quarterly), N. Y.

WEDNESDAY, *October 24th*: Virginia State Medical Society (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *October 25th*: Virginia State Medical Society (third day); New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Massachusetts Medical Benevolent Society (annual); Cumberland, Me., County Medical Society, Portland.

FRIDAY, *October 26th*: Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *October 27th*: New York Medical and Surgical Society (private).

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Tenth Annual Congress, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, Dr. RUFUS P. LINCOLN, of New York, in the Chair.

A Decade of Laryngology was the subject of the address by the PRESIDENT, who said that the members of the association were to be congratulated upon the successful termination of ten years of their labors. The association presented now every evidence of healthy and vigorous growth, and gave promise of long life; it was one that patients and the medical profession at large were bound to respect. The objects of the association had been clearly formulated by the lamented Elsberg in the first annual address. They were, in brief, that this association should become the means of mutual introduction of those of kindred tastes in the practice of medicine, and of fostering friendships thereby made; that it should have annual meetings for the contribution and promulgation of original work, and for the discussion of subjects pertaining to laryngology; that its proceedings should be published in a suitable form for convenience of its members, and offered to the profession at large; that it should institute a laryngological library; that prizes should be offered for valuable contributions to the science of laryngology; that special hospitals, or wards in hospitals already established, should be devoted to throat patients; and that its members should seek recognition in the different medical colleges throughout the country by the assignment of a special chair for instruction in this department. Except the

offering of a prize, all these requirements had been realized. The organization of the association had marked the beginning of a new era in laryngology. Analyzing the original contributions read at the previous meetings of this association (omitting presidential addresses), the speaker found that there had been 194 scientific papers, which might be classified as follows: (1) Anterior nares: 18 were upon diseases of mucous membrane and submucous tissue, 5 on tumors, 10 on deformities, 9 on neuroses, and 2 on the cavity of the antrum. (2) Of the nasopharynx, 5 referred to disease of the mucous membranes and submucous tissues, 7 to tumors, and 3 to deformities. (3) Of the oro-pharynx, 18 referred to diseases of mucous membrane and submucous tissue, 6 to tumors, 2 to deformities, 6 to neuroses, and one was anatomical. (4) Of the larynx, 20 papers were on mucous and submucous tissue, 18 on tumors, 6 on stricture of larynx and trachea, 4 on diseases of cartilages, 18 on diseases of the nerves, 3 on fractures and wounds, 8 on anatomy and physiology, 5 on therapeutics, 2 on syphilis, 4 on vocalization, 3 on intubation and tracheotomy, 1 on foreign bodies, 1 on laryngectomy, 4 on photography, and 5 general. There had also been exhibited more than fifty new instruments, or modifications of old ones. Many papers had been illustrated by sketches, photographs, pathological specimens, or microscopical exhibitions, or accompanied by living patients. These contributions had been published, eagerly sought after by medical journals, and had been published in the annual volume of transactions. An attempt to disparage the specialist, or rather to criticise his relation to the patient and the family physician, at present could be met by pointing to the work done by this association, and the reply could be made that "if there was a want of harmony it must be the fault of the individual rather than of the principle. The more strictly one was a specialist and the less a general practitioner 'with a preference,' the less chance there would be for discord between the expert and the family physician." The patient was no longer regarded as the private property of one physician. The principle of the subdivision of labor was permeating all classes of effort, while in the profession, in addition to these principles, the old and new code were being merged into the Golden Rule. In conclusion, the speaker referred to the growing interest in preventive medicine, and called attention to the field which this opened to the prevention of diseases of the air-passages. The question of increasing the membership of this association came before this meeting: it was advised that vacancies should be filled by representative workers in laryngology in recognition only of valuable contributions to the department. The death of Dr. Woolsey Johnson, of New York, a member of this association, was referred to in fitting terms, and a sketch of his life and work was given.

Imaginary Laryngeal Ulceration.—Dr. GEORGE M. LEFFERTS, of New York, read a paper on this subject. The condition embraced in this paper was one in which the patient came to the physician complaining of pain affecting a portion of the tongue, giving rise to the belief that he was suffering with ulcer. Although no ulceration could be detected, even on careful examination, yet the sensation was real to the sufferer. Since the cause was unknown and routine treatment unsatisfactory, the subject invited our consideration. The condition had been given its name by Verneuil. The clinical appearances were usually as follows: A patient—male or female, for the affection occurred with equal frequency in the sexes, and at from thirty-five to fifty years of age—presented himself, complaining of intense pain, usually of a lancinating or darting character, limited to one half of the tongue, usually the left, and extending from its base, just opposite and below the tonsil, forward to its tip. Or the pain might be more circumscribed, and limited to the junction

of the posterior with the middle third of the organ, at or near the location of the posterior lenticular papillæ. It was more or less intermittent, rarely constant; was aggravated by movements of the tongue, although these were free; was often increased by the act of mastication, and excited by hot or irritating articles of food. The patient was in fear of cancer, became demoralized, and could not be convinced that ulceration did not exist. Such patients were not invariably hypochondriacal, as had been asserted. On the contrary, the affection was met with in those who presented no evidences of a neurotic or even nervous temperament; it was occasionally seen in individuals possessing and presenting all the signs of robust health, and the mistake had been made, and was made to-day, of ascribing alone to the imaginative fears of the patient what actually existed as an undoubted, if not always demonstrable, physical and painful fact. The tongue, on examination, presented a normal appearance, unless, through injudicious applications or from other cause, there was some irritation indicated by enlargement of the papillæ, and the tongue became more or less swollen. Verneuil and, it was believed, Labbé considered this affection as purely neuralgic. Fournier, Lollé, Hardy, Luys, and Magitot regarded the symptoms as hypochondriacal. Poyet said that the delusion might be referred to one of four causes: (1) Neuralgia of the tongue; (2) imagination, leading the patient to suspect cancer; (3) hypochondria; and (4) lingual psoriasis. Cases were certainly met with which could not be ascribed to any of these causes, and where all local irritation had been removed—such as from decayed teeth, teeth filled with amalgam, or disease of the gums. The general or local cause was unknown. Injudicious routine treatment by local applications was not only unavailing, but often aggravated the condition. Nothing was uniformly successful. Applications of cocaine or aconite sometimes succeeded, but often failed, and the same was true of the various treatments usually employed for neuralgia. Electricity was of service. Hypodermic injections of analgesic drugs had been recommended, and even the galvano-cautery. Neurotomy must be discarded, mainly because of the impossibility of proving whether the lingual or the glosso-pharyngeal nerve was at fault. The object of this paper was simply to place this rare and curious affection in its true light, and bring up the question of treatment.

Dr. F. H. BOSWORTH, of New York, considered the name of the disease open to criticism. Until it was better understood, he would prefer to call it simply Verneuil's disease.

Dr. E. FLETCHER INGALS, of Chicago, had found that rheumatism was present in some cases, which had only yielded to the usual treatment for this condition. In other cases neuralgia seemed to be the cause. He mentioned a case where this painful condition existed in a man who had been shot through the chest, and who had not improved under treatment. In other cases it seemed to resemble the sore mouth occurring as a result of the tobacco habit, which disappeared when the habit was broken. Some patients were benefited by the use of tobacco.

The PRESIDENT observed that he had met with cases associated with rheumatism, but in which this had not explained the cause. He mentioned the case of a lady, who had suffered with rheumatic pain upon one side of her body and also with this condition of the tongue, in whom the general condition had been amenable to treatment, while the local pain in the tongue had not been benefited by it.

Dr. LEFFERTS, in conclusion, said that rheumatism was a good suggestion and applied to some cases. Many of the patients, though, were in robust health, with no suspicion of rheumatism. In regard to tobacco, many of the patients were women, who generally did not smoke. The question of treatment was

the special object of the paper. Patients clamored for relief, and the question was, What should we do for them?

Dr. EDGAR HOLDEN, of Newark, had treated six cases on the assumption that they were of rheumatic or gouty character. Three were treated successfully—two with arsenic, one with lithia water.

A Case of Subglottic Chronic Stenosis of the Larynx treated by Dilatation.—Dr. FRANK DONALDSON, of Baltimore, read a paper in which he gave the history of a case. The patient, a woman thirty-four years of age, presented, in October, 1887, a condition of subglottic stenosis, probably due to diphtheritic inflammation and subsequent cicatrization and contraction by membranous bands. Schroetter's long hard-rubber perforated tubes were used, commencing with No. 1 and gradually going up to No. 5, having first touched the larynx with a 15-per-cent. solution of cocaine. Subsequently there had been some difficulty of breathing after a catarrhal attack, and it was possible that there might be some return of the obstructing membrane. Otherwise the relief had been complete.

Stenosis of the Larynx and Trachea.—Dr. CARL SEILER, of Philadelphia, read the report of a case. The peculiar points in the case were, first, the fact that the patient, a small boy, had learned to articulate audibly without any air passing through the larynx. He produced the articulate sounds by filling the oral and pharyngeal cavities with air, and then, by a rapid contraction of the pharyngeal constrictors, he forced it forward past the natural obstructions, thus making the consonant sounds. The second point was the peculiar features of the operation undertaken for the relief of the stenosis. This consisted of an external incision through the two upper tracheal rings and the cricoid cartilage. The operator's finger was then introduced through the mouth into the larynx, and, pushing the tumor causing the stenosis downward, it was removed from below with a forceps through the external wound. The stricture of the trachea was situated lower down, just above the old tracheal wound, and was due to ulceration, which had followed the original tracheotomy performed two years prior to the laryngotomy. This stricture reduced the lumen of the trachea to about one third of an inch. The method pursued for curing this stricture was simply to take the cannula out of the old wound and introduce it into the upper wound and through the stricture. At the end of a month the tube was removed, no obstruction to breathing was experienced by the patient, and he soon learned to use his voice like other children.

Syphilitic Stenosis of the Trachea.—Dr. JOHN N. MACKENZIE, of Baltimore, reported the history of a case.

Stricture of the Larynx with Extensive Cicatrization from a Case of Ulcerative Tuberculosis.—Dr. J. SOLIS-COHEN, of Philadelphia, presented an interesting specimen showing this condition.

Dr. DELAVAN, Dr. RICE, Dr. INGALS, Dr. LEFFERTS, and Dr. COHEN discussed the preceding papers. It was asserted that O'Dwyer's tubes were valuable accessories to the treatment of laryngeal stenosis. In cases where there was extensive cicatricial constriction any treatment would be only palliative; where the constriction was narrow and membranous, dilatation or cutting might entirely relieve the patient. Where the stenosis was caused by adhesions between the arytenoids, Dr. Cohen pointed out that laryngeal dilatation would never afford permanent relief.

An Instrument for opening the Larynx without Previous Incision of the Skin was presented by Dr. EDGAR A. HOLDEN, which was offered as a possible substitute for tracheotomy and intubation in certain cases.

The paper was discussed by Dr. DALY, Dr. SEILER, Dr. COHEN, Dr. LANGMAID, Dr. LEFFERTS, Dr. BOSWORTH, and Dr.

HOLDEN. Some minor modifications were suggested in the instrument, which otherwise was favorably received. The proposed operation was hailed as a valuable contribution to laryngology.

Two Cases of Interest in the Clinic of Laryngology at the Lariboisiere Hospital.—The secretary read a paper on this subject, contributed by Dr. A. GOUGUENHEIM, of Paris. The first case was one of cancer of the larynx in a workman, fifty-six years of age, upon whom tracheotomy had been performed in 1887. Owing to extension of the disease to the wound and down the trachea, it was necessary to have a longer tube, the lower portion of which should be flexible. This was accomplished by Mathieu, of Paris, by making the lower portion of the inner tube in spiral section and movable. A rubber bougie was used to introduce the outer cannula. In spite of the irregularities of the passage, the instrument was easily introduced, and answered the purpose for which it was designed. One notable feature was that the instrument always remained *in situ* when the strings which fastened it round the neck were unloosened, thus differing from ordinary cannulae. The instrument was made of silver.

The second case was one of buccal perforation opening into the maxillary antrum in a workwoman thirty years of age. This was due to necrosis, the result of syphilis.

The SECRETARY announced the reception of a communication, also, from E. J. MONEL, M. D., of Bordeaux, France, on **Acute Oedema of the Subepiglottic Region and Lower Pharynx in a Diabetic Patient**, which was likewise read.

A paper on **Parasites Inhabiting the Human Nares**, by Dr. D. N. RANKIN, of Alleghany City, Pa., was read by Dr. C. H. Knight, of New York, in the absence of the author.

Election of New Members.—At the close of the morning hour an executive session was held, at which the following members were elected: Dr. S. Oakley Vander Poel, of New York; Dr. F. Whitehill Hinkel, of Buffalo; and Dr. John H. Lowman, of Cleveland, Ohio. There being still one vacancy, it was voted not to adopt the amendment increasing the limit of membership. Dr. J. Solis-Cohen gave notice that he would offer the same amendment at the next meeting.

Residence at Certain Great Altitudes as a Means of Cure for Laryngeal Phthisis.—The secretary read a paper with this title, contributed by Dr. CLINTON WAGNER, of New York, in which cases were reported of cure by prolonged residence in the Adirondacks and other mountain health-resorts.

Dr. W. C. GLASGOW, of St. Louis, had had much experience with this class of cases, and had observed that whenever a consumptive had a throat complication a visit or a stay in a high elevation had been injurious. When the throat complication was marked, he recommended a stay in a lesser altitude (say three thousand feet) until this had been relieved before going to the greater altitude (say five thousand to seven thousand feet). He did not regard all cases of throat complication in phthisis as being cases of laryngeal phthisis; he did not believe that true tubercular ulceration of the larynx would get well in any climate.

Dr. E. L. SHURLY, of Detroit, confirmed the last observation, and spoke of the difficulty of diagnosis. The discovery of the *Bacillus tuberculosis* had not given the assistance that was hoped, as it might be present in chronic bronchitis and might not be found in well-marked instances of phthisis pulmonalis. He had seen better results following a visit to the sea-shore in some cases than from sending them to the mountains. Each case must be studied by itself.

Dr. LEFFERTS confirmed the statement that there were two kinds of laryngeal ulceration—one due to lowered vitality, the other to tuberculosis; the latter never healed, and in such cases the patient was much better off at home than elsewhere.

A Hitherto Undescribed Neurosis of the Aural Apparatus closely allied to Coryza Sympathetica.—Dr. JOHN N. MACKENZIE, of Baltimore, read a paper with this title. In the course of a former article on "Respiratory Vaso-motor Neuroses" he had called attention to a condition of the aural apparatus closely akin to vaso-motor coryza. He now reported an illustrative case: A lady, forty-two years of age, married, had had a peculiar periodic affection of the ear, coming on every summer. She had been accustomed to luxury, but during later years she had been considerably reduced in circumstances, thus causing much strain upon her nervous system, though not a nervous woman, certainly not hysterical. The affection had made its appearance suddenly after a visit to the White Sulphur Springs, West Virginia. It recurred about the first day of June each year. Intolerable itching of the auditory canal and corresponding side of the throat was soon followed by swelling of the lining membrane along the auditory canal, until the meatus became completely occluded; the surface of the swollen membrane was intensely sensitive, preventing the employment of topical applications except hot water. This was followed by middle ear inflammation and occlusion of the Eustachian tube. The affection was limited to one side in each attack, although the recurrence usually involved the ear which had escaped the preceding year. The paroxysms of the disease were of almost daily appearance for four weeks, when they disappeared suddenly. During last summer, spent at a "hay-fever resort," she escaped the malady for the first time in twenty-two years.

The case was interesting because it represented a hitherto unrecognized and undescribed affection of the ear, and because it furnished additional evidence in favor of the doctrine maintained by the author concerning the rôle of the sympathetic in the so-called motor and neuro-vascular affections of the upper respiratory tract, and as a pregnant illustration of the law that "the area in which the vaso-motor reflexes occur will depend, other things being equal, on the seat of the local pathological process, or the localization of the area of peripheral excitability." In this case the process was in the neighborhood controlled by the otic ganglion, while, in the ordinary form of conjunctival and nasal affection, the vaso motor supply was obtained through the ophthalmic. If these affections were closely studied we might gain some light upon the pathology of the sympathetic nerves.

Dr. SHURLY, Dr. SAJOURS, Dr. ALLEN, and Dr. MACKENZIE discussed this communication.

Further Investigations as to the Existence of a Cortical Motor Center for the Human Larynx.—Dr. D. BEYSON DELAVAN, of New York, read a paper with this title, and presented a specimen consisting of the arteries at the base of the brain, together with the vertebral artery of the left side, which presented an enlargement just at the point where it would come in contact with the pneumogastric nerve. Possibly this might have caused the interference with the functions of the larynx that were observed during life.

Internal Œsophagotomy, with Report of Successful Cases.—Dr. JOHN O. ROE, of Rochester, N. Y., read a paper on this subject. In case of cicatricial constriction of the Œsophagus, the author considered it safer to make several linear incisions two millimetres in depth in the constriction before attempting dilatation than to attempt dilatation without it. When the cicatrix was horseshoe-shaped and did not include the entire circumference of the Œsophagus, attempts to force a probang through the constriction might produce rupture of the healthy portion. The preferable plan was to make incisions on each side and at the back before attempting dilatation.

Dr. RICE, Dr. INGALS, Dr. LANGMAID, Dr. SAJOURS, and Dr. DELAVAN participated in the discussion, in which reference

was made to spasm of the Œsophagus and the diagnosis of stricture.

Dyspepsia as Reflected in the Mucous Membrane of the Upper Air-passages.—Dr. BEVERLEY ROBINSON, of New York, by appointment, opened the discussion upon this subject, and in the course of his remarks cited a number of cases in which digestive disturbances were accompanied by disorders of the upper air-passages, and others in which local affections of the naso-pharynx and larynx disappeared when the condition of the digestion or diet was corrected.

Dr. SHURLY did not accept the statement that naso-pharyngeal disease caused dyspepsia, because many cases were entirely free from gastric symptoms, but he did believe that dyspepsia, plethora, and sedentary habits of life were frequent causes of naso-pharyngeal catarrh.

Dr. W. H. DALY, of Pittsburgh, had had much experience in the use of general constitutional remedies, such as strychnine and calomel, in treating nasal disorders, and indorsed the remarks of the previous speaker with reference to the necessity of correcting the patient's habits of life.

Dr. ROBINSON closed the discussion with the remark that it was important for every specialist to occasionally have his work criticised from the standpoint of the general practitioner, in order to prevent him from becoming too exclusively devoted to special methods of treatment.

The Anatomy of the Nasal Chambers.—Dr. HARRISON ALLEN, of Philadelphia, made a communication on this subject, and illustrated his remarks by exhibiting skulls and wet specimens of the human head in section.

Dr. FRANK BAKER, of Washington, remarked that it was possible that the facts noted by Dr. Allen as to the occurrence of irregularities and deviations within the region anterior to a vertical plane passing through the anterior ethmoidal foramina might have a morphological significance. That region was formed by the orbito-nasal process of the embryonic cranium, and was at first a cartilaginous capsule of considerable relative size, the different sinuses—maxillary, frontal, ethmoidal—being formed by vesiculation and absorption. It was a region of peculiar physiological action in this respect. It would seem probable that, on further examination, it would not be limited by a plane as arbitrarily drawn as the one suggested by Dr. Allen.

Notes on a Case of Nasal Caries complicated with Meningitis successfully treated by Means of the Surgical Drill.—Dr. WILLIAM C. JARVIS, of New York, read a paper with this title.

The Treatment of Atrophic Rhinitis by the Galvanic Current.—Dr. J. H. HARTMAN, of Baltimore, read a paper on this subject, and exhibited electrodes which he had found especially adapted for the purpose.

A Photographic Study of the Laryngeal Image during the Formation of Registers in the Singing Voice.—Dr. THOMAS R. FRENCH, of Brooklyn, N. Y., read a paper with this title, using the calcium light to exhibit the photographs upon the screen. The exhibition was a very fine one, and, although in the discussion which followed the lecture there was some want of agreement as to what constituted a register and the functions of the larynx in forming it, there was only one opinion as to the value of Dr. French's work.

Congenital Bony Occlusion of the Posterior Nares in a Child, relieved by the Surgical Drill.—Dr. CHARLES H. KNIGHT, of New York, reported an interesting case, an interesting feature consisting in the fact that the operation afforded an opportunity for the development of the latent olfactory sense.

Antiseptic Nasal Surgery.—Dr. CLARENCE C. RICE, of New York, read a paper on this subject. The author referred

to the general adoption of antiseptic methods, and urged their application to nasal surgery, as far as practicable, in order to obtain more rapid healing and to escape the dangers of septicæmia.

The Treatment of Some Forms of Chronic Laryngitis.—

Dr. CHARLES E. SAJOUS, of Philadelphia, read a paper in which remarkable results were reported from touching the thickened vocal cords by means of a protected applicator slightly coated with chromic acid. He had found cocaine objectionable in these cases, since its prolonged use led to increase of secretions from the mucous membrane. Cases were reported of complete restoration of voice under the treatment indicated.

The Cure of the Falsetto Voice.—Dr. J. C. MULHALL, of St. Louis, read a communication on this subject. The paucity of literature upon the subject had led to the presentation of this paper, which contained notes of several cases in which a falsetto voice was restored to the normal by voice-training and instruction in elocution. Dr. J. SOLIS-COHEN, Dr. JARVIS, Dr. GLASGOW, Dr. LANGMAID, Dr. DELAVAN, Dr. LINCOLN, and Dr. KNIGHT discussed the paper, the conclusion being that whereas some cases had been encountered which were considered intractable by some, others had been successful in curing all cases by teaching the patient the proper register for his voice and by vocal drill.

Subglottic Laryngeal Enchondroma.—Dr. E. FLETCHER INGALS, of Chicago, read a paper on this subject.

Laryngeal Papilloma from the Body of a Child.—Dr. S. W. LANGMAID presented a specimen. It almost identically repeated the case which was shown by an illustration in the well-known work of Causit, published in 1867.

Angeioma of the Larynx.—Dr. W. C. GLASGOW, of St. Louis, read a report of a case. Colored drawings of the appearance of the growth *in situ* and in section were presented. Attention was called to the peculiar translucent appearance of the growth, which resembled currant jelly, through which the cord could be clearly seen.

This communication was discussed by Dr. J. SOLIS-COHEN, who spoke of four cases that he had published.

Primary Sarcoma of the Tonsil.—Dr. ALEXANDER MACCOY, of Philadelphia, reported the history of a case. The rarity of reports of this affection was noteworthy, although the last two years showed a number of cases, which was probably to be explained by an increasing number of observers and by improved methods of study. To this paper was appended an epitome of cases recorded, so far as accessible to the writer.

The patient, a mulatto woman, aged forty-five, married, no children, came under observation in May, 1886. A maternal aunt had died with a tumor of the breast, and also a sister; a niece and nephew had died with consumption of the lungs. Paternal family history unimportant. The patient had always suffered with menstrual irregularity; the menstrual flow lasted for several months, and then would not reappear for six months. When she came under observation she had complained of sore throat and painful deglutition. There was unusual redness and some swelling of right tonsil, presenting the appearance of mild tonsillitis. Three months later the swelling had increased, and there was a fissure or cleavage of the surface, in which there was a grayish pultaceous exudation with a foetid odor, which, however, yielded to carbolic acid, iodine, and glycerin solution. The general health was good, and there was no lymphatic glandular enlargement. A few days later there was noticed infiltration of the anterior palatine fold; the process never completely destroyed the uvula, and for a long time did not appear to cross the median line. The opposite tonsil was not affected. A stage of quiescence had now intervened which continued for several weeks. Subsequently the infiltration extended into the pharynx, involving the Eustachian tube, and ulceration steadily

increased. After about six months the tongue showed implication, and the gums and the cheek, and about this time the submaxillary gland became enlarged, and at eight months became indurated, together with other lymphatic glands. The patient now rapidly lost flesh, and difficult respiration and pain became prominent symptoms. The patient shortly afterward died rather suddenly during an attempt to go away from the city. No post-mortem was obtained.

In this case prompt surgical interference was not instituted, because (1) of the rarity of the case and want of a clear diagnosis; (2) the early symptoms being like simple tonsillar inflammation, preventing diagnosis, which was still more interfered with by absence of the patient from the city; (3) a tardy report from the microscopist, to whom a part of the tissue removed had been referred for examination.

Donovan's solution was administered in rather large doses (14 drops three times a day) for a number of months, without gastric derangement or constitutional injury. Galvano-cautery, lactic acid, and iodine and carbolic-acid applications were used. The latter combination (each crystallized, 1 to 4) appeared to destroy the fætor most effectually during the stage of sloughing. The duration of this case was one year.

Dr. J. SOLIS-COHEN, in opening the discussion, referred to another case for which he had advised immediate operation. The patient went to New York, and the growth was very thoroughly removed by Dr. Bosworth with the forceps. Three or four years later the patient was still in good health.

Dr. DELAVAN favored early operation. He had seen several cases in which removal of the growth through the mouth had afforded relief, and in which an external operation would have threatened the patient's life.

Dr. MACCOY called attention to the influence of three powerful alteratives in Donovan's solution—iodine, arsenic, and mercury—given in large doses, in retarding the course of the disease.

The Surgical Pathology, Ætiology, and Treatment of Hæmorrhage after Amygdalotomy.—Dr. D. BRYSON DELAVAN read a paper on this subject. (It will be published hereafter.)

Dr. ROE, Dr. MACKENZIE, Dr. DALY, Dr. SAJOUS, and Dr. DELAVAN discussed the subject, the conclusion being that although there had been no fatal case reported, yet there occasionally occurred cases of hæmorrhage after amygdalotomy that gave rise to fears of a fatal result. Dr. DALY recommended compression between fingers in the mouth and the thumb externally. Dr. Sajous instructed his patient to make pressure with his own fingers.

Dr. SAMUEL JOHNSTON, of Baltimore, presented a young woman showing lupus lesions of nose, pharynx, hard palate, and larynx, who was examined.

The Effects of Varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerve was the title of a paper by Dr. FRANKLIN H. HOOPER, of Boston. (It will be published hereafter.)

Mr. VICTOR HORSLEY, of London, being invited to open the discussion, expressed his gratification at hearing the report just presented. Dr. Hooper had been the first to show the effects of certain drugs upon the larynx, and now the first to demonstrate the different rates of stimulation upon the larynx. It especially interested the speaker to know that he had obtained a repetition of the phenomena in the cat which Mr. Horsley had previously observed in conjunction with Dr. Semon. One of the results of the experiments made with Dr. Semon was the determination of the existence and location of a cortical center for the larynx in the cat. Contrary to what usually occurred in the dog, it was found that stimulation of this cortical center produced abduction of the vocal cords, and it was consequently

very interesting to the speaker to learn that Dr. Hooper had observed the same thing by stimulating the recurrent nerve that Dr. Semon and he had obtained by stimulating the cortex. He urged Dr. Hooper to extend his investigations to the cortex, and to repeat them upon monkeys, and thus independently arrive at results which might test observations made by others.

Dr. H. P. BOWDITCH, of Boston, was especially interested in the reverse action of certain laryngeal muscles when the intensity of the stimulation was increased. The first explanation of this might be that the opening muscles were more irritable but less powerful than the closing muscles. Light stimulation, therefore, would affect the former and not the latter, but upon continuing the stimulation, the latter, being stronger, would close the larynx in opposition to the weaker opening muscles. But another explanation must be given of the different effect produced by altering the rate of stimulation. These experiments had been begun in order to investigate the results of Wadenski obtained by stimulating the muscles of the leg, in connection with Ritter's well-known experiments upon the sciatic nerve. They had never been able to confirm the results of Wadenski. The speaker asked Mr. Horsley if he had any theory to explain the varying action of the muscles of the larynx under different rates of stimulation.

Mr. HORSLEY said that he had none to offer. In his own experiments upon the recurrent laryngeal nerve he had observed in a few instances that different effects were produced when the electrodes were to the inner side of the nerve than when they were placed upon the outer side.

Officers for the Ensuing Year.—Dr. E. Carroll Morgan, of Washington, president; Dr. W. C. Glasgow, of St. Louis, and Dr. Charles E. Sajous, of Philadelphia, vice-presidents; Dr. D. Bryson Delavan, of New York, secretary and treasurer; and Dr. Thomas R. French, of Brooklyn, librarian. The next place of meeting is at Washington, and the time the last Tuesday of May, 1889.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of September 12, 1888.

The President, Dr. J. SOLIS-COHEN, in the Chair.

(Concluded from page 387.)

Symptomatology.—The laryngeal symptoms of secondary syphilis are not characteristic. They are chiefly comprised in dissonant alterations of the voice, either hoarseness, dysphonia, or in some cases occasional or temporary aphonia. The hoarseness is supposed to have some peculiarity which has been termed *raucedo syphilitica*, but this is not the case. In some instances it is simply due to the catarrhal laryngitis, in others to paresis of one or more of the constrictor muscles, or possibly to paralysis of the tensors. Respiration is not affected except in those instances in which œdema occurs in such a position as to occlude the passage for air, when it will be announced by dyspnoea and stridulous respiration, the characteristic symptoms of that condition. Titillation and cough are not so frequent as in inflammations of other origin. In many instances there is no tickling, cough, pain, or dysphagia. Dysphagia is not present unless there is œdema of the parts employed or pressed upon in deglutition.

In tertiary syphilis of the larynx the symptoms are usually those of impairment of phonation, followed in severe cases by dyspnoea and stridor also, chiefly inspiratory. The stridor is worse at night, from inaction of the auxiliary muscles of respiration. Should the mechanical impediment to respiration increase, inspiratory depression of the soft parts below the sternum takes place. If relief is not obtained, artificially or otherwise, asphyxia supervenes from imperfect aeration of the

blood. Suffocation may occur suddenly from impaction of detached cartilage, but is more frequently slow enough in its approaches to allow time for tracheotomy. Titillation and cough are more frequent in the earlier stages than in secondary syphilis, but they diminish after ulceration has taken place, except in so far as they are produced from time to time by morbid products detained upon diseased and adjacent surfaces. Pain is infrequent before the period of ulceration; after that it may be severe, and radiate into the ears as in other ulcerative diseases. In the early stage there is no expectoration. The earliest expectoration is of collateral catarrhal products only. As ulceration progresses it becomes muco-purulent, and then purulent and sanguineo-purulent, and mixed with detritus according to the stage and location of the lesion. If gangrene takes place the odor becomes foetid, and the expectoration contains fragments of dead soft and cartilaginous tissue, as may be. Dysphagia ensues when the disease is in a locality to interfere with deglutition, and odynphagia when ulcerations have occurred in the same localities.

In tertiary syphilis of the trachea the symptoms affect mainly the function of respiration, the voice often remaining normal even when breathing is seriously embarrassed. Pain along the course of the trachea, if constant, is indicative of lesion at that particular point. Cases may run their entire course without any special symptom, even in the presence of stricture of the trachea and of the bronchi and of extensive disorganization as revealed at the post-mortem examination.

In hereditary syphilis the symptoms are sometimes congenital and may remain practically continuous for years. Respiration and phonation are both affected. The cry of the infant sometimes possesses a shrill metallic resonance which has been compared to that of a tin trumpet. Cough is more frequent in the child than in the adult. Deglutition is often difficult and sometimes painful. Expectoration occurs in the suppurative stages when the child is old enough to expel the products, which by infants are swallowed or retained in the air-passages. Laryngismus is a symptom of frequent occurrence in young children.

Ætiology.—The probable condition attracting the manifestation of constitutional syphilis to the larynx is superficial catarrhal laryngitis from hereditary or acquired proclivity, or from exposure, or from abuse of tobacco or alcohol or other indulgence, or from misuse of the voice. Such exposures cause more males to be affected than females, as there is no assignable sexual reason for preponderance. Tracheal lesions, on the other hand, have been reported more frequently in females, probably because the laryngeal lesion is attended to more promptly by the male. Syphilitic disease often extends by continuity from the oropharyngeal region to the larynx, principally along the pharyngo-epiglottic fold to the epiglottis, and thence along the aryteno-epiglottic fold, and from the two structures to the interior. Hereditary syphilis has been observed in intra-uterine life (Monti, "Med. Times," Philadelphia, April 28, 1877, p. 336). Hereditary syphilis of the most intense character has been occasionally observed at a very early age, as in the case of an infant whose symptoms began with coryza in the tenth week of life, and terminated in death by suffocation from stenosis nineteen days later. Post mortem, the examination revealed, in addition to syphilitic lesions in the liver, destructive perichondritis of the cricoid and left arytenoid cartilages, and fatty degeneration of the arytenoid and both posterior crico-arytenoid muscles and the left superior nerve (Fränkel, "Wien. med. Woch.," 1868, Nos. 69, 70, cited by von Ziemssen and by Mackenzie). Children less than a year of age often show laryngeal lesions of hereditary syphilis, and ulcerative lesions have been seen at two months of age (Parrot, "Prog. méd.," 1878, p. 635). Many cases occur in children but

a few years of age, and sometimes the manifestations are deferred to the period of puberty or even later. Indeed, in opposition to the received opinion of syphilographers, I have reason to believe that in a few instances I have seen its manifestations delayed as late as the third and even the fourth decennium. True, in such instances as the latter it is quite possible that infection may have been acquired in some method unknown, without having been followed by any secondary manifestations, or that early hereditary manifestations may have escaped recognition. The secondary manifestations occur most frequently in adolescents and young adults. They appear most frequently at periods varying from a few weeks to a few months after infection, sometimes as late as the fourteenth or seventeenth month (Morgan). Tertiary lesions are most frequent at rather maturer ages, and occur occasionally in quite advanced life. They have been reported as early as the sixteenth month (Türk), and as late in their first appearance as the thirtieth (Türk), and even the fiftieth year (Mackenzie). Tracheo-bronchial tertiary lesions have been reported as appearing as early as the ninth month after infection, but these lesions are usually coincident with the laryngeal lesions when not immediately consecutive to them. Most of the instances of tracheal syphilis occur in individuals whose employments expose them to irritation from dusts of various kinds (Vierling, "Deutsches Arch. f. klin. Med.," 1878, Bd. 21). Hereditary tracheo-bronchial syphilis is far less frequent than the laryngeal forms. It has been observed before the age of puberty.

Diagnosis.—The differential diagnosis between secondary and tertiary lesion is sometimes difficult, particularly in the transitional period especially described by Whistler. The discriminating characteristics are less well marked in the laryngeal syphilis, perhaps, than in any other variety. It may, however, be broadly stated that secondary lesions, erythematous, papular, condylomatous, or paralytic, are superficial; and that tertiary lesions are gummatous, ulcerous, carious, necrotic, and deep-seated. Laryngitis occurring within a few months of infection is almost invariably secondary. Lesions appearing before the termination of the third year are presumptive secondary; those appearing within the third year, secondary, or transitional; and those appearing after the termination of the third year, tertiary. Nevertheless, secondary lesions may be ulcerous, and undoubted tertiary manifestations have been recognized even within nine months of infection.

The history of the case, and the previous or actual presence of manifestations of syphilis elsewhere, are the main positive factors in the diagnosis of specificity, especially in the early stages of either variety. The later lesions of tertiary syphilis are often sufficiently characteristic; sometimes not at all so. In cases of doubt, antisiphilitic treatment will almost always detect a lesion of syphilitic origin, but not invariably. Hence, in instances of strong suspicion, the various methods of anti-syphilitic medication should be thoroughly tried before that test is abandoned. This suspicion is justifiable in cases of obstinate chronic laryngitis, whether ulcerative or not, in individuals in whom no other appreciable local or constitutional cause can be detected.

Laryngoscopic inspection is an invaluable aid in diagnosis; though practically indispensable, it is inadequate for fully appreciating the extent of deeply seated lesions; and its revelations are not always sufficient to establish the diagnosis in the absence of corroborative lesions elsewhere. The erythematous and catarrhal inflammations of secondary syphilis, when diffuse, are not to the ordinary eye distinguishable from similar non-specific conditions. Circumscribed erythema, though usual in syphilis, occurs in non-specific laryngitis also, consequently that condition alone is insufficient for discrimination. Patchy erythema

on the vocal bands and elsewhere may be regarded as characteristic. Not so, however, the shaded pigmentations at the extremities of the vocal bands.

Symmetric bilateral localization of erythematous and other patches is highly characteristic of secondary syphilis; but a contrary condition by no means excludes the diagnosis. Isolated bilateral congestions of the supra-arytænoid structures and of the Wrisbergii have been cited as pathognomonic. Nothing can be more fallacious or misleading. Enlarged inguinal and post-cervical glands furnish excellent corroborative testimony of syphilis. Papules or condylomata upon an erythematous mucous membrane are to be considered pathognomonic. Their recognition may require an exceptionally good light on the one hand, or repeated examinations on the other. They must be carefully discriminated from minute collections of mucus or of saliva. Diffuse gummatous infiltration is to be distinguished first from inflammatory syphilitic infiltration by the coexistence of gummatous processes elsewhere, its more circumscribed contour, and its sharper definition. The differential diagnosis is much easier after it has reached the stages of liquefaction and ulceration.

Syphilitic ulceration usually proceeds from above downward, rarely in the opposite direction, and often in extension from ulceration in the pharynx. Repair usually proceeds from below upward. Apart from these guides there is nothing positively characteristic enough to determine an ulceration to be syphilitic in character by mere inspection. The absence of pain has been regarded as characteristic, but, on the one hand, carcinomatous ulceration often exists without pain, and, on the other hand, the ulcerative lesions of syphilis are sometimes attended with lancinating pains of the most severe character.

In the gummatous stage of tertiary syphilis the diagnosis is not difficult. Nodular syphilides and gummata are recognized in the forms and at the localities mentioned under pathology. They may be confounded with other neoplasms, and with abscess. In cases of doubt, antisiphilitic treatment should clear up the diagnosis. The physical distinction between gummata and condylomata may in some instances be obscure (Semon). The main reason why gummata are so infrequently seen as to have led some observers to an erroneous opinion as to their rarity is that many patients do not present themselves until after the stages of liquefaction and ulceration have become established. When this stage has not been observed, and the larynx, as is more usual, is not inspected until after ulceration has considerably progressed, the appearances are not always characteristic. They may be confounded with those of lupus, carcinoma, and tuberculosis. The general diathesis, the clinical history, the existence of enlarged submaxillary and post-cervical lymphatic glands, the character of concomitant affections of the skin and mucous membrane, the aspect of the patient, assist in discrimination. Sometimes, too, tuberculous and syphilitic lesions co-exist.

The typical tertiary ulcer, sharply defined, and below the surface of the mucous membrane, is more or less circular when recent, more or less crenated when reparation is taking place at one or more points of the circumference, and looking as though cut out with a punch when in oedematous tissues. Its borders are sharp, elevated, but not often undermined, and more or less rounded in their visible outline, and are surrounded by a more or less circumscribed inflammatory areola in the mucous membrane. The bottom feels hard to the probe on palpation. The bed of the ulcer is grayish or lardaceous, yellow from fatty detritus, and covered with adherent concrete pus, through which, here and there, prominent rosy granulations often project. The surrounding tumefaction is harder and more indurated than in other varieties of ulcer. Purulent accumulations are rather indicative of the syphilitic process. At a

later date denuded or necrosed cartilage may be visible in suitably located ulcers.

In cases in which neoplasms have become developed at the seat of existing ulcerations, or of cicatrized ulcerations or erosions, it is often impossible to pronounce as to their nature, even by the test of antisyphilitic treatment. Not only do such neoplasms exist independently of the syphilitic process, or as the result of irritation provoked by a syphilitic process in the vicinity, but, when undoubtedly syphilitic in origin, they rarely disappear under specific medication. Tertiary syphilis is usually recognizable in the stages of œdema of the larynx; and almost always in the reparative stages of cicatrization, or in the subsequent stages of stenosis, whether from cicatricial retraction or from organization of effused products.

Prognosis.—Secondary lesions, even when ulcerative, are most frequently curable without cicatrix or without any other sequel. Exulceration of the vocal bands sometimes leaves permanent defect of tissue. The prognosis is good except during temporary conditions of œdema, when it may be grave for the time being. The inflammatory congestion and turgescence are more chronic than in catarrhal inflammations, and are often recurrent. Actual hyperplasia is apt to remain permanent, even after cure of the syphilitic lesion, despite the most assiduous treatment; and when it occupies a vocal band the voice may be permanently impaired. The singing voice may remain imperfect, although the conversational voice is fully restored, the injured tissues being unequal to the nicety of adjustment requisite for cantation.

In tertiary lesions the prognosis depends mainly on two factors: First, on the impairment of the general health, and the significance of lesions elsewhere, especially in the brain and meninges, and in other important organs. Second, in the extent of ulceration and the character of deformation or stricture which may follow. Temporary gravity exists in the presence of œdema, during the period of exfoliation of necrosed cartilages, and in acute bilateral paralysis of the dilator muscle, the result of exposure to cold or other cause, or to unilateral paralysis when the opposite side is immobile from gumma, or from crico-arytænoid ankylosis (Charazac, "Rev. mens. de lar.," September, 1884), any of which conditions may demand prompt tracheotomy to prevent death by suffocation. Ulcerative lesions of the trachea may be fatal by hæmorrhage from penetration of large blood-vessels; by pneumonia from access of food through perforation of œsophagus (Berger); or by septic processes due to rupture of the mediastinum. Permanent impairment of the voice is to be expected in all cases in which the vocal bands undergo serious injury, and in many in which permanent changes are likely to take place in other structures contiguous to the glottis. Deglutition is rarely affected, even after complete destruction of the epiglottis; and in exceptional cases difficulty is mainly confined to fluids swallowed without deliberation. Stricture rapidly supervening upon hyperplasias is often amenable to active treatment, sometimes with striking rapidity (Krishaber); but the more frequent stricture of slow progression can only exceptionally be brought under control. Serious danger attends even cure of extensive ulcerative lesions in the interior of the larynx, for the resulting stricture, if severe, is likely to necessitate tracheotomy, with great probability of permanent retention of a cannula. It is rarely amenable even to excision of cicatricial tissue by external access. Subglottic stricture is much more serious than supraglottic, and tracheal far more serious than laryngeal stricture. Stricture of the trachea, when low down, is practically insusceptible of amelioration, and death by slow apnoea, or by sudden suffocation, is the usual outcome.

When the syphilitic cachexia has advanced so far as to have

produced incurable lesions in important viscera or in the cerebrum, death may ensue from these causes despite sustained cure of syphilitic lesions in the larynx. In cases complicated with paralysis of the dilator muscles of the larynx from cerebral lesion, death may take place by occlusion of the glottis and suffocation, or by encephalitis and coma.

In hereditary syphilis the prognosis is very much the same as in tertiary syphilis, being much worse in infancy and childhood than in more delayed manifestations. The small size of the larynx renders stricture and intercurrent œdema far more significant; and the tendency to spasm of the larynx inherent to all laryngeal affections in childhood presents an additional element of danger. Fatal issues from these three causes are not infrequent. An element of uncertainty as to the final result remains in all varieties of syphilis of the larynx and trachea, due to the fact that permanent liability to recurrence prevails in many instances, despite the best apparent results of the most judicious treatment; and often, too, after prolonged intervals of immunity from any further manifestation of constitutional syphilis.

Treatment.—Fortunately, lesions even of great destructive and menacing tendency are amenable, as a rule, to treatment; often promptly. The treatment, broadly stated, is that applicable to constitutional syphilis in general: mercury in the early manifestations and iodides in the late ones. In many of the latter, if not most, the "mixed treatment," combining the two specifics, is the most serviceable. In congenital syphilis the gray powder is believed to be the most efficacious form of the drug. While willing to admit that secondary lesions often subside without traces and without much risk of subsequent tertiary manifestations, although mercury is withheld, I deem it the more prudent practice, and therefore the best practice, to employ mercury, in the belief that its specific constitutional influence affords the patient better protection as to future manifestations. As to the value of iodides in tertiary syphilis, there is no difference of opinion. Tonics are often indicated. All sources of irritation, exposures, excessive use of the voice, alcohol, and tobacco, are to be avoided. Sedative inhalations in vapor or spray are often of great topical benefit in subduing collateral inflammation; and antiseptic inhalations are indicated in gangrenous cases.

Secondary syphilis. Mercury may be administered by the stomach or by the skin. When the lesions are moderately severe or slow in progress, the corrosive chloride may be administered, in doses of from one sixteenth to one eighth of a grain, three times a day. The green iodide may be given in doses gradually increased from one sixth of a grain three times daily to the point of tolerance. The addition of extract of belladonna may cause it to be better borne by the stomach. In individuals in whom serious gastric disturbance is produced before any specific effect has been noted, and in seriously severe cases and cases of rapid progress, inunctions of a drachm of mercurial ointment daily are preferable, or pencilings with solutions of oleate of mercury in oleic acid, ten per cent. Lewin prefers hypodermatic injections of corrosive chloride. Concurrent stomatitis is to be combated by the internal administration of potassium chloride, or the use of a saturated solution of that salt, or of a weak solution of potassium permanganate as a mouth-wash. It is hardly necessary at the present day to mention that salivation is to be avoided. In my own experience topical medication is, as a rule, superfluous in non-ulcerative secondary syphilis, and often unnecessary in the presence of ulceration. When topical medication seems necessary, inhalations of sprays of corrosive chloride (Demarquay), half an ounce or more daily of a solution containing one grain to four ounces of water, are useful locally and constitutionally. In particularly obstinate conditions, especially in the presence of

hyperplasias, the topical application of solutions of iodine and potassium iodide in glycerin (Schnitzler), half a drachm and a drachm, respectively, to the ounce, made daily or at longer intervals, sometimes accelerates the cure.

In the transitional stage and in the tertiary stages the "mixed treatment" has been the most beneficial in my own practice; one sixteenth to one eighth of a grain of the corrosive chloride, five to ten grains of potassium iodide in half an ounce or more of the compound syrup of sarsaparilla, three times a day. It may sometimes be necessary to increase the dose of the iodide up to the point of tolerance. In such cases the "grain-to-drop" solution is the most convenient preparation. The danger of inducing œdema of the larynx by sudden large doses must not be forgotten. When necessary, sodium or ammonium iodide may be substituted for the potassium salt, or hydriodic acid may be employed.

In the presence of œdema, hypodermic injections of corrosive chloride (Lewin), one thirtieth of a grain, twice a day for a day or two, and, after improvement, at intervals of three days or more, have proved quite efficacious. If amelioration is not prompt, and if the patient can not be carefully watched by an attendant competent to interfere in an emergency, it is best, in my opinion, to perform prophylactic tracheotomy, instead of awaiting its urgent indication. The same rule is applicable to threatening cases of extensive hyperplasia whether from specific or from non-specific infiltrations. Nevertheless, remarkably happy results, even in urgent cases of these kinds, have frequently followed active treatment by inunction (Krishaber) and by hypodermatic injection (Lewin). Intubation of the larynx from the mouth (O'Dwyer) has been recommended as applicable in many instances of œdema and constriction heretofore treated by tracheotomy. As yet, I know of no experience with intubation in this special connection.

Ulcerations heal more promptly when the constitutional treatment is seconded by topical cauterizations with fused silver nitrate, or with mercuric nitrate, one part to from four to ten parts of water, or with cupric sulphate in crystal or saturated solution. Chromic acid, one part in from five to eight parts of water, has long been extolled (Isambert). Some prefer iodoform (Morgan). On the other hand, extensive ulceration often heals promptly under the influence of constitutional treatment alone.

Vegetations, detached flaps of mucous membrane, and semi-detached fragments of necrosed cartilage call for operative removal with cutting forceps, evulsion forceps, or snares, as may be most convenient, when these products are so located as to interfere with freedom of respiration or to threaten such interference. When these manipulations are impracticable, tracheotomy may be requisite. When tracheotomy has been performed under any of the conditions mentioned, the cannula is to be removed as soon as it has become apparent that its retention is no longer essential to the safety of the patient. Cicatricial stricture of the larynx may be treated by the introduction of the intubation-tube through the natural passages (O'Dwyer). This treatment may be applicable to stricture high up in the trachea. Stricture in the middle portion of the trachea requires low tracheotomy and the introduction of a tube long enough to reach beyond the constriction. Stricture at the bifurcation is hopeless.

Paralyses, even those of the posterior crico-arytænoids, are usually amenable to antisiphilitic treatment even when of considerable standing. This fact seems to indicate that the atrophy found in necrotic paralysis is not due to simple inaction of the muscle, but rather to trophic impairments of neurotic origin. Electrization may be employed when relief does not ensue from systemic medication.

Membranous webs, occluding the glottis from side to side, are divided by incision or by the galvano-cautery, the edges cauterized, and readherence prevented, if possible, by frequent introduction of dilating sounds. These laryngoscopic operations are often rendered futile by an insurmountable tendency to recicatization, whereby the morbid condition is reproduced. Success in cases of this kind would seem to require exposure of the interior of the larynx by external division of the thyroid cartilage, and excision of the whole of the cicatricial tissue (Mackenzie).*

When syphilitic laryngitis has existed for a long time, such an amount of destruction may have taken place, and such a degree of systemic poisoning, as to render recovery impossible. The constrictions produced by the cicatrices of extensive ulcers, and the adhesions between adjoining surfaces, in patients who recover, are often such as to render tracheotomy necessary, with the permanent use of the tube; for the constrictions following syphilis are not, as a rule, amenable to dilatation.

Threatened asphyxia or unconquerable dyspnoea, from gumma, loose cartilage, morbid growth, abscess, or œdema, may necessitate tracheotomy. Tracheotomy for the purpose of conquering dyspnoea due to tumefactions in the larynx is perfectly justifiable and usually successful. It is likewise justifiable for the mere purpose of securing rest to the organ—much more so, indeed, than in analogous conditions attending tuberculosis.

The treatment for local adhesions consists in relieving the tension as far as possible by laryngoscopic division of the constricting bands of tissue, with the knife or with the electric cautery, and then cauterizing and recauterizing the adjacent surfaces, to prevent fresh adhesions. These cases require careful watching and prompt attention to overcome the disposition to recurrence, which is very apt to take place in spite of all efforts. When the epiglottis is implicated, much good can be done by teaching the patient to move the organ frequently by means of his forefinger.

In a case of stenosis due to "concentric hyperchondrosis," as a result of the hyperplastic chondro-perichondritis, Heine has performed a successful resection of the anterior portion of the thyroid cartilage, splitting that structure in the middle line, separating the perichondrium and superjacent soft tissues, to the distance of one half its surface on the two sides, with the elevator, and then removing the denuded portions by longitudinal section with a bone forceps. The patient rallied so well from the operation that an artificial vocal apparatus could be substituted for the ordinary cannula on the fifth day. He became able to resume work after a while; but the disease made new inroads, and he died, eleven months later, in an advanced stage of tuberculosis.

Despite the most judicious treatment, and the most satisfactory immediate results, recurrence or recrudescence takes place in many instances at variable intervals, requiring the resumption of specific treatment. The most satisfactory results alleged by any writer have been in cases actively treated by Lewin with hypodermatic injections. It is advisable to keep patients under observation for many months after active treatment has been discontinued. Mercuric iodide (biniodide) in small doses, one twentieth to one tenth of a grain, three times daily, may judiciously be given for prolonged periods during which apparent health exists. Potassium iodide, in diminishing doses, should be administered from time to time for a few days every month until the patient begins to show susceptibility to physiological effects from small doses; and then this susceptibility should be tested from time to time at intervals of a few months. Such

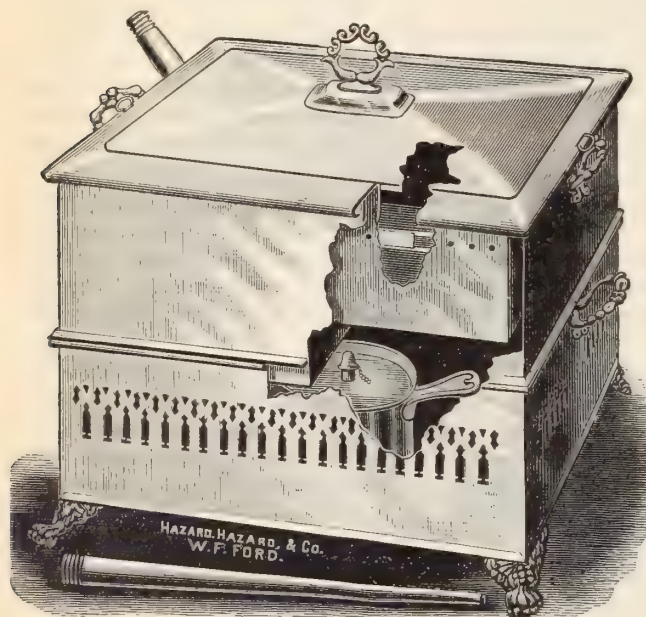
* "Med. Times and Gaz.," August 19, 1871, p. 218.

supervision for two years at least seems to present the best prospect for riddance from the diathesis. It may be mentioned in conclusion that, under intercurrent attacks of erysipelas, obstinate cases of tertiary syphilis of the larynx and trachea have undergone cure after having resisted all medicinal treatment.

New Inventions, etc.

A COMBINED WARMING-PAN AND CROUP-KETTLE.

THE accompanying cut represents an ingenious and exceedingly useful device for the sick-room. It consists of a covered pan which rests in a water receptacle, a spirit lamp, and a tube which can be lengthened, when desirable, by the addition of an additional piece. The covered pan can be used for dry or steam heat, the change being effected by closing or opening a slide on each side near the top. The



desirability of this apparatus for making or heating broth, keeping food warm, making poultices, etc., is too obvious to need more than a mere mention. The additional tube converts the apparatus into a very convenient and serviceable croup-kettle. It is known as "Aunt Kate's Poultrice-Pan," and is sold by Mr. W. F. Ford, of Hazard, Hazard, & Co.

Miscellany.

The New York Academy of Medicine.—At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 23d inst., Dr. Francke H. Bosworth will read a paper on "Disease of the Accessory Cavities of the Nose."

At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 24th inst., a paper entitled "Recent Observations relating to Intubation" will be read by Dr. F. Huber, and one entitled "Statistical Results of Intubation" by Dr. Dillon Brown.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 25th inst., Dr. C. C. Lee will read a paper on "The Value of Hysterorrhaphy as a Primary or Consecutive Operation in Uterine Displacement," and the discussion of the relative value of primary operation and electricity in extra-uterine pregnancy, as presented in papers by Dr. Hawley and Dr. Buckmaster, will be continued.

The New York Post-graduate Medical School and Hospital.—Dr. William A. Hammond, who is shortly to move to Washington, was announced to give his farewell clinic on Wednesday, the 17th inst.

The Health of Kansas City, Mo.—According to the "Weekly Return of Births and Deaths" to the Health Department for the week ending Saturday, October 13th, there were 42 deaths, including 1 from cholera infantum, 1 from diarrhoea, 1 from intermittent fever, 2 from typhoid fever, 2 from typho-malarial fever, 1 from marasmus, and 2 from cerebro-spinal meningitis.

Egyptian Cigarettes.—The "Lancet's" Cairo correspondent says: The irresponsible writer who succeeded in starting a correspondence on this subject in the leading lay journal, before he was promptly disowned by Middlesex Hospital, informed the public that this form of smoking was productive, in his opinion, of malignant throat disease. His experience is not borne out by European doctors here, who see men smoking every day their forty or fifty cigarettes without harm, and without a single recorded case of cancer occurring in the throat. Most of the succeeding letters of this correspondence call for no remark until we come to one signed by "M. D.," containing a warning that the heat from the burning cigarette paper, or possibly the quality of the paper used, may have influence in keeping up an irritable form of chronic bronchitis. Now, in this favored country we are debarred from seeing much bronchitis, but we do occasionally see cases of obstinate pharyngitis not yielding to drug treatment. In some such cases I have persuaded Englishmen to substitute cigars for their thirty or more daily cigarettes. They thus smoke a greater and stronger supply of tobacco, but they lose their pharyngitis. This looks as if the paper, or possibly the chlorine used in bleaching it, was the direct cause of the chronic inflammation. The only other evil I have ever seen from cigarette smoking during five years' hospital and private practice is a mild dyspepsia, patients complaining of perpetual furred tongue, taste in mouth, etc. These will generally be found to smoke thirty or more cigarettes a day, and their dyspepsia will vanish when they resolutely cut down their maximum to ten. The more severe symptoms of tobacco poisoning so well known in England are not seen among those devoted to the mild Turkish tobacco. By such I mean tobacco amblyopia, irregular heart and pulse, dilatation of pupil, nervousness, insomnia, etc. The last letter of the correspondence which has reached us here is signed by three initials, and gives the opinion of a medical officer who served during the last Egyptian campaign. He states that it is "undoubtedly the case that opium is largely introduced in their (native cigarettes) manufacture." He bases his belief upon the fact that he used to be asked at shops whether he wished his cigarettes to be "highly or moderately flavored." The explanation of the flavoring is very simple. Smyrna tobacco, which constitutes about 20 per cent. of a second-class cigarette, is recognized by the trade as being inferior to Yenidjé tobacco, and is called in Egypt perfumed or flavored tobacco, while Yenidjé is called natural tobacco. The question therefore is a harmless one, meaning, Do you want much or little of the Smyrna leaf in your cigarettes? The question of adulteration with opium is worth a reply. Obviously, if the tobacco is mixed with opium, it must either be done in Turkey, where the plant is grown, or in Egypt, where the leaf is made into cigarettes. Now, at Smyrna, where opium could easily be bought, its wholesale price varies from £2 to £3 per pound; and as the best tobacco only costs there 6s. per pound, it is not likely that either cultivator or buyer will go out of his way to doctor the leaves. At Yenidjé and Cavalla opium is not grown, and must therefore be dearer than at Smyrna. In Egypt opium is practically not grown now, and the quantity imported, as shown by the Customs reports, is only sufficient for dispensing chemists; moreover, its price is again prohibitory, the cheapest opium fetching nearly three times the price of the most expensive tobacco. All the sellers here indignantly deny that their cigarettes are doctored with opium or any other drug, and unanimously affirm that good Turkish tobacco is so delicate that it will not admit of the least perfume or flavor of a foreign nature without becoming at once so changed as to be unsmokable. Yesterday I visited the four largest factories without warning, and was shown every stage of the process, and satisfied myself that there is certainly no doctoring of the tobacco at any of the four establishments.

No first-class tobacco is grown in Egypt, and the Egyptian cigarettes now smoked all over the world are made from *Nicotiana tabacum*, var. *macrophylla* (Duval), and *Nicotiana rustica* (Linn.), of which the finest plants are grown at Yenidjé and Cavalla. The Egyptian merchants, who are all Greeks, maintain that they buy the best of the crops, and ship the produce off to Cairo to avoid the monopoly of the Tobacco Regie, the remainder being sold by the Regie. The proper time for sowing in Turkey is in December; goat's manure on the land gives the best perfume ultimately, and the delicate plants must be protected by matting from cold and snow. In April the seedlings are transplanted, and in August the leaves are ready to be gathered. The quality varies according to the part of the plant from which leaves have been taken; the lowest are rank and very inferior; the small upper leaves furnish tobacco of the best quality, and the middle leaves, mixed with a percentage of the smallest, constitute afterward the cheapest varieties of cigarettes. The gathered leaves are therefore kept in three lots, and when they have been well dried in the sun they are pressed and made up into bales of not less than one hundred pounds. Before pressing the leaves they must be slightly damped by water in Smyrna, but this is not necessary in Yenidjé and Cavalla. The two great points to strive for are color and scent, and these are dependent on careful picking, seed, and climate. The seed ought to be renewed every second year. The Cairo merchants buy the bales on the spot about March or April, carefully sort the leaves again, and then ship them to Alexandria after they are once more dried, so that they may be ready for use in Cairo the following October.

The bales are opened as required, and the various leaves mixed so that four different-priced qualities result, the best kind being that in which there is the least Smyrna tobacco and the least percentage of large leaves. If cigarettes are made exclusively of the best leaves, which are light yellow-brown in color and measure only four by two inches, the aroma is very pleasant, but the smoker gets a headache after about five of them. The middle leaves, when dry, measure about seven by four inches and a half, and the lowest leaves of all are considerably larger. Cairo air is so dry that the leaves must be damped with water here before being cut; but in Alexandria this is not necessary. English-made machines cut up the leaves, and on the following day the cigarettes are rolled by Greek, Syrian, or Jewish workmen. A clever workman can roll as many as 1,500 a day. The cigarettes are then carefully overhauled by an expert, left a week to dry, and then packed in tin boxes ready for sale. They should of course be smoked directly, instead of being kept, as is too often the case in England. So much for the tobacco; now for the paper. All large Cairo firms employ one kind of paper only, which is made by a half-English company at Fiume, near Trieste. It comes to Alexandria in foolscap sheets, and is there cut up to the required size. It is not known how it is made, or whether it is chiefly rice straw; but the merchants here all vow that it is the best they can get. If one is right in suspecting the paper instead of the tobacco, it might be well to try to get cigarettes rolled in tobacco-leaves instead of paper. The only other ingredient left to consider is the starch for joining the paper. This is used with a thin stick by the men who roll the cigarettes. I may say that each workman is allowed to smoke as many cigarettes (say forty) as he likes during his work, and is presented with ten every night to take home with him. The first establishment that I visited only came into being five years ago, but now it has three branch shops in London, and one in Bombay, Berlin, and New York. The proprietors sell only one per cent. of their cigarettes in Egypt, but export 600,000 a week to England, besides 400,000 weekly to India, Europe, China, Australia, etc. My second visit was paid to a well-known purveyor, who exports 250,000 a week to England alone, where I saw 100 men rolling cigarettes and bales full of the best tobacco-leaves. At the third house I was shown several bales of Jobeck tobacco from Yenidjé. This consists of specially selected leaves, and is the finest possible from Turkey. This proprietor sends about 125,000 every week to England. My fourth visit was to a man whom I had never heard of before, but who was keenly alive to the correspondence in the English newspapers. He sends every week more than 80,000 cigarettes to England, and a greater quantity to Germany. Although in a smaller line of business than the others, he gets his leaves and his papers from the same spots as his competitors. There are, of course, many other

reputable establishments in Cairo besides these four, which, as I have shown, supply every week 1,000,000 cigarettes to England alone, and about the same number to other parts of the world. My opinion is that no opium or other drug is mixed with the tobacco, and even in hasheesh dens the devotee buys a bit of the cannabis indica extract and mixes it himself with the tobacco. In conclusion, one practical hint from a wise old Oriental who smokes seventy or eighty cigarettes a day, his wife smoking almost as great a number: Always use a cigarette-holder, and in the holder a tiny plug of cotton wool previously dipped in lemon-juice and changed every time with the cigarette.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 12th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending September 22d corresponded to an annual rate of 18 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 11.1, and the highest in Preston, viz., 27.8 in a thousand. Small-pox caused 1 death in Hull. Diphtheria caused 2 deaths in Manchester.

London.—One thousand two hundred and ninety-eight deaths were registered during the week, including measles, 32; scarlet fever, 20; diphtheria, 24; whooping-cough, 22; enteric fever, 11; diarrhoea and dysentery, 78; simple cholera and choleraic diarrhoea, 4. Diseases of the respiratory organs caused 179 deaths; different forms of violence, 69; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 15.8 in a thousand. In greater London 1,629 deaths were registered, corresponding to an annual rate of 15.4 in a thousand of the population. In the "outer ring" the deaths included diarrhoea, 30; diphtheria, 8; whooping-cough, 7.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending September 22d in the sixteen principal town districts of Ireland was 19.2 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 4.8, and the highest in Armagh, viz., 46.5 in a thousand. In Dublin 125 deaths were registered, including enteric fever, 3; scarlet fever, 1; diarrhoea, 17; whooping-cough, 1; dysentery, 1.

Scotland.—The deaths registered in eight principal towns during the week ending September 22d corresponded to an annual rate of 17.3 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 9.8, and the highest in Paisley, viz., 27 in a thousand. The aggregate number of deaths registered from all causes was 436, including measles, 10; scarlet fever, 6; diphtheria, 6; whooping-cough, 2; fever, 4; and diarrhoea, 29.

Netherlands.—The deaths registered in the principal cities of the Netherlands, having a population of 1,149,778, during the month of July, 1888, corresponded to an annual rate of 19.7 in a thousand of the population. The lowest rate was recorded in Leeuwarden, viz., 14.5, and the highest in Hertogenbosch, viz., 25.2. The total number of deaths from all causes was 1,924, including typhus and enteric fever, 12; scarlet fever, 1; measles, 14; whooping-cough, 18; diarrhoea and dysentery, 50.

Calcutta.—Seven hundred and twenty deaths were registered during the month of July, 1888, including cholera, 54; small-pox, 2; fevers, 181; bowel complaints, 54.

Catania, Italy.—Four hundred and thirty-five deaths were registered during the month of July, 1888, including small-pox, 87; typhoid fever, 13; typhus fever, 1; other contagious diseases, 43. The sanitary condition of the city (excepting a few cases of small-pox) was good.

Hobart, Tasmania.—Sixty-one deaths were registered during the month of July, 1888, including 1 from typhoid fever.

Malta and Gozo.—Two hundred and five deaths were registered during the period from the 16th to the 31st of August, 1888, including measles, 7; diphtheria, 1; continued fever, 2; and dysentery, 3.

Cardenas, Cuba (October 5th).—Good health is reported in town and harbor. Low barometer and rainy weather.

Barbadoes, W. I. (September 22d).—There is no system of registration. Health of island good.

Vera Cruz.—The United States consul states, under date of September 27th, that "the general health of the place is good. There are no cases of yellow fever here this week. One death from small-pox on the 27th, and no other cases reported."

Bordeaux, France.—Four hundred and fifty-one deaths were registered during the month of August, 1888, including enteric fever, 8; and diphtheria and croup, 8.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.
Paris	Sept. 22.	2,260,945	838	..	..	4	..	13	1	12	7
Glasgow	Sept. 22.	545,678	194	..	..	..	..	1	4	..	..
Warsaw	Sept. 15.	444,814	248	..	..	..	..	..	13	7	..
Calcutta	August 25.	433,219	165	12	..	1	..	..	..	..	..
Rome	August 11.	300,467	190	..	..	..	..	4	..	3	..
Edinburgh	Sept. 15.	262,733	70	..	..	..	..	2	..	..	..
Palermo	Sept. 15.	250,000	78	..	..	..	..	..	5	1	..
Palermo	Sept. 22.	250,000	83	..	..	..	..	..	1	4	..
Belfast	Sept. 22.	227,022	87	..	..	..	..	1	..	..	..
Genoa	Sept. 22.	179,780	68	..	..	3	1	..	1	..	..
Toronto	Sept. 29.	130,000	36	..	..	..	..	1	2	..	..
Stuttgart	Sept. 22.	125,510	41	..	..	..	..	..	3	..	..
Bremen	Sept. 20.	122,000	42	..	..	..	..	1	..	..	..
Havre	Sept. 15.	112,074	79	..	..	1	..	14	1	..	..
Pernambuco	Sept. 4.	110,000	87	..	..	..	2	1	3	..	..
Pernambuco	Sept. 11.	110,000	83	..	..	..	..	1	2	..	..
Barmen	Sept. 15.	109,000	36	..	..	..	2	..	1	..	..
Barmen	Sept. 22.	109,000	29	..	..	..	..	..	1	..	..
Leith	Sept. 15.	74,320	22	..	..	..	..	1	..	..	..
Cadiz	Sept. 15.	65,028	42	..	..	..	..	..	..	..	..
Guayaquil	Sept. 1.	35,000	63	..	..	1	..	23	..	..	..
Guayaquil	Sept. 8.	35,000	65	..	2	9	..	12	..	..	..
Vera Cruz	Sept. 27.	23,800	19	..	..	1	..	..	..	..	..
Gibraltar	Sept. 16.	23,631	10	..	..	..	..	..	1	..	..
Kingston, Can.	Sept. 28.	15,827	..	..	..	..	..	..	..	..	..
Kingston, Can.	October 5.	15,827	15	..	..	..	..	..	..	..	..
St. Thomas	Sept. 21.	15,000	40	..	..	1	..	..	..	..	..
Cartagena, Col'a.	Sept. 8.	13,000	8	..	..	1	..	..	..	..	..
Cartagena, Col'a.	Sept. 15.	13,000	14	..	..	..	..	..	..	..	..
Laguayra	Sept. 8.	7,428	4	..	..	..	..	..	..	..	..
Laguayra	Sept. 15.	7,428	12	..	..	..	..	..	..	..	..
San Juan del Norte	Sept. 10.	500	..	..	..	..	..	..	..	..	..

UNITED STATES.

The following circular, relative to the treatment of foul ships, has been issued:

TREASURY DEPARTMENT,

U. S. MARINE-HOSPITAL SERVICE,

WASHINGTON, D. C., October 5, 1888.

To Medical Officers of the Marine-Hospital Service,
and others whom it may concern:

In order to stimulate ship-masters to aid in securing a clean ocean-going fleet, the following regulation concerning the treatment of foul ships is hereby adopted, and will be observed at all national quarantine stations:

1. When a vessel arrives at any national quarantine station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a national quarantine station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures, will include holly-stoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

JOHN B. HAMILTON,

Supervising Surgeon-General, M.-H. S.

Approved:

HUGH S. THOMPSON,

Acting Secretary.

GROVER CLEVELAND.

Jacksonville, Fla.—Dr. J. Y. Porter, in charge of Government relief measures, telegraphs as follows:

October 4th: "New cases to-day, 75; deaths, 1. Total cases re-

ported, 2,970; deaths, 271. Patients, St. Luke's, 19; patients, Sand Hills, 26."

October 5th: "Request approval of the following: To suspend any general disinfection until epidemic ceases; have each house where cases have occurred visited as soon as possible, and mattresses, blankets, and woolen material that can in any way serve as fomites stamped with some device to distinguish them, and at close of epidemic destroyed. Parties not able to bear the expense to be reimbursed for the same on fair valuation made by board of appraisers from Citizen's Auxiliary Association. Parties financially able to bear loss to have no reimbursement. Establish a free boiling establishment for linen and cotton goods. The city and Board of Health will guarantee full authority by ordinance to enter and disinfect houses and premises."

October 5th: "New cases to-day, 52; deaths, 6. Total cases reported, 3,022; deaths, 277. Patients, St. Luke's, 26; patients, Sand Hills, 23."

October 6th: "New cases to-day, 81; deaths, 5. Total cases reported, 3,103; deaths, 282. Patients, St. Luke's, 23; patients, Sand Hills, 25. Desire to formulate rules for the disinfection of homes and destruction of property. Can not do so until I get fuller instructions. Will establishment for boiling infected material be authorized?"

October 7th: "New cases to-day, 48; deaths, 9. Total cases reported, 3,151; deaths, 291. Patients, St. Luke's, 22; patients, Sand Hills, 25."

October 8th: "New cases to-day, 50; deaths, 4. Total cases reported (corrected), 3,208; deaths, 295. Patients, St. Luke's, 21; patients, Sand Hills, 25."

October 9th: "New cases to-day, 93; deaths, 4. Total cases reported (corrected), 3,319; deaths, 299. Patients, St. Luke's, 18; patients, Sand Hills, 26."

October 10th: "New cases to-day, 63; deaths, 3. Total cases reported, 3,382; deaths, 302. Patients, St. Luke's, 18; patients, Sand Hills, 29."

October 12th: "New cases to-day, 66; deaths, 4. Total cases reported, 3,495; deaths, 308. Patients, St. Luke's, 18; patients, Sand Hills, 33."

Camp Perry, Fla.—Surgeon W. H. H. Hutton reported as follows:

October 4th: "Morning report. Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 32; discharged, 2; remaining, 168; remaining, unable to leave, 65; total, 293. Fever camp, 5, all convalescent."

October 5th: "Morning report. Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 16; discharged, 11; remaining, 173. Destitute furnished transportation, 21 adults and 5 children."

October 6th: "Morning report. Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 8; departed, 28; remaining, 156. Fever camp, 5; all well."

October 6th: "Received five hundred dollars from Louisville "Courier-Journal" for distribution among destitute people in camp."

October 7th: "Morning report. Present—officers, 6; guards, 11; employees, 42. Refugees arrived, 21; discharged, 4; remaining, 173. Fever camp, 3 convalescent; 2 new cases this morning."

October 8th: "Morning report. Present—officers, 6; guards, 11; employees, 42. Refugees discharged, 23; remaining, 150. Fever camp, 5."

October 8th: "Just received from Mayor Hewitt check for \$1,500 on account of Brewers' Exchange."

October 9th: "Morning report. Present—officers, 6; guards, 11; employees, 42. Refugees arrived, 16; discharged, 17; remaining, 149. Fever camp, 6."

October 12th: "Morning report. Present—officers, 5; guards, 11; employees, 42. Refugees arrived, 15; discharged, 35; remaining, 140. Fever camp, 6."

October 13th: "Morning report. Present—officers, 5; guards, 11; employees, 42. Refugees arrived, 7; discharged, 21; remaining, 136. Fever camp, 6."

Fernandina, Fla.—Surgeon Ross, U. S. Navy, telegraphed as follows:

October 5th: "Report for twenty-four hours ending 6 P. M., new cases, 17; deaths, none; under treatment, 28."

October 5th: "Much more sickness here, principally among negroes, than is thought or reported. Howard Association has no more means than necessary for care of sick and needy. Number of latter large and increasing. Many infected houses and much infected bedding here which should be fumigated, disinfected, and some destroyed. Will you furnish means for fumigation, disinfection, and compensation for articles destroyed, thereby greatly diminishing danger of trouble in future, especially next year?"

This request was approved under certain restrictions.

October 8th: "For twenty-four hours ending at 6 P. M., new cases, 23; deaths, none."

Surgeon Ross has been authorized to have a small house built on Tiger Island, near the entrance to the harbor, for the accommodation of crews of incoming ships while such ships are being overhauled and loaded in the city.

St. Augustine, Fla.—Dr. J. F. Hartigan, United States Sanitary Inspector, telegraphs as follows:

October 9th: "Have been investigating here two days. Place healthy. Palatka to-morrow. Will report on so-called dengue."

Palatka, Fla., October 11th.—"Am at Palatka to-day. Place healthy. Leave for Seville to-morrow."

Green Cove Springs, Fla.—The following telegram has been received from Assistant Surgeon William Martin, U. S. Navy:

October 11th: "During past two months twelve cases have occurred here and surrounding country, whose history warrants classification mild type yellow fever. One now under treatment convalescent. Typical case found last Sunday three miles in country, now convalescent. No deaths. Suggest employment of Dr. Merrill as sanitary inspector, six barrels of sulphur forwarded immediately, and employment of guards for isolation when necessary. Do not anticipate spread. Sanitary condition very good."

Tampa, Fla.—Sanitary Inspector M. B. Harrison telegraphs:

October 13th: "For week ending October 7, 1888, there were six new cases yellow fever at Palmetto. Total, 66; deaths, 1."

Jackson, Miss.—Dr. Wirt Johnston, Secretary State Board of Health, telegraphed:

October 4th: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5."

October 5th: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5."

October 6th: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5. Will not report again until a change, unless desired."

New York, N. Y.—The following letters have been received:

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
PRESIDENT'S OFFICE, NEW YORK, October 3, 1888.

SIR: In reply to your letter of September 27th I have pleasure in sending you the clinical history of the case of the late Professor Proctor. I do not think it would be proper for me to express an individual opinion as to whether or not the case was one of yellow fever. I can only say that I was warranted in so considering it by the concurrent opinions on which the action of this department was based. Among those acquainted with the facts and qualified judgment, I am not aware that any difference of opinion exists as to the nature of Professor Proctor's disease. As bearing upon the subject of your official inquiry I deem it proper to say that Professor Proctor stated that refugees from infected districts had arrived at Oak Lawn before he left. Mr. George Wilson, a neighbor and friend, who brought Mrs. Proctor to New York, denies the correctness of Professor Proctor's statement on this point, concerning which we have no other evidence. The Professor could not remember the names of the railroads over which he traveled from Oak Lawn to this city.

Respectfully,

(Signed)

JAMES C. BAYLES,
President.

Clinical History of the Case of Richard A. Proctor.

Richard A. Proctor, aged fifty-three years, was taken sick, according to his statement, Friday, September 7, 1888, with several slight chills. On this date he was at his home in Oak Lawn, Fla. Saturday,

September 8th, he started for New York city by railroad, arriving at the Westminster Hotel, Irving Place and Sixteenth Street, Monday, September 10th. From the initiatory chills until he was seen by Dr. George W. Conant, of New York, at 8 A. M. Tuesday, September 11th, he stated that he "felt mean," and was feverish continually; also that he had vomited several times on Sunday while in sleeping-car en route from Florida. During the evening of Monday, September 10th, he was found by one of the porters attached to the Westminster Hotel asleep on a hall floor. Thinking him intoxicated, the porter roused and accompanied him to his room, placing him on the bed in his clothes, where he remained until the following morning, when he was seen by Dr. Conant at 8 A. M.

Dr. Conant found him in a semi-conscious condition, pulse 130, temperature 100.5° in the mouth. He complained of slight headache, nausea, and uneasy feeling in back. He stated also that he had been subject to attacks of malaria, and believed from experience that he was suffering from such an attack.

At 10 A. M., same day, Dr. Conant notified the Division of Contagious Diseases of the Health Department, and at 11 A. M. Dr. Cyrus Edson, of the Health Department, saw him with Dr. Conant. He was still in semi-conscious condition, but, when roused, talked and answered questions rationally. His skin was hot and dry. Temperature, 103°; pulse, 136, and weak; respirations, 22.

He complained of nausea, and vomited food and drink given him. His eyes were injected and glistening. Conjunctivæ jaundiced, skin slightly so, facies anxious. Percussion and palpation showed small liver and normal spleen. No abdominal tenderness, and no ileo-cæcal gurgle. On being requested to do so, he passed about six ounces of dark urine, which was found to contain blood, hyaline and granular casts, and about 15 per cent. per volume of albumin.

At 3.15 P. M., same day, he was seen by Drs. A. Jacobi and Conant. His mental condition was then better; temperature, 101.5°; pulse, 104 and very weak; threatening syncope. The second sound of the heart was faintly audible over sternum, but could not be heard elsewhere over the chest walls. A specimen of urine passed at this time was examined, and found to contain hyaline casts and 1% per cent. per volume albumin.

At 5 P. M. his temperature, taken by Dr. B. McCann, of the Health Department, who remained with him as nurse, was found to be normal.

At 9 P. M. he was again seen by Drs. Jacobi and Conant. His condition was much improved. Temperature, normal; pulse, 88, and stronger. He was very talkative; spoke of his family, etc. He complained of acidity of stomach, and said if he could only get rid of it he would feel well.

At 12.45 A. M., September 12th, he was removed by Dr. Edson with great care on cot to ambulance to Willard Parker Hospital. At time of removal his condition was still better, pulse strong. He protested against being carried, and declared that it was ridiculous to carry him, as he felt perfectly strong and well, and would walk back in the morning. He was accompanied in ambulance by Dr. Edson, and talked freely during the ride.

At the hospital he was placed in a private room, and expressed himself pleased with the change from the hotel. His pulse was then 112 and strong. He passed a comfortable night with Dr. Priest, house physician, and a nurse in attendance.

At 11 A. M., September 12th, he was seen by Drs. Jacobi, Edson, and Priest. He was comatose, and had been so since 6 A. M. Skin covered with perspiration, slightly more jaundiced than on preceding day; temperature, 103.5°; pulse, 136; respiration, 25; some pulmonary œdema; pupils dilated slightly, and responded sluggishly to light. His urine was drawn by means of catheter, and was found to contain a marked trace of albumin. His condition continued same until 7.15 P. M., when he suddenly vomited about a pint of characteristic coffee-grounds matter, and died in three minutes thereafter.

Dr. Priest reported that the last attack of vomiting was projectile, and that a tonic convulsion of the muscles of the face, neck, and upper extremities occurred at the moment of dissolution.

CYRUS EDSON, M. D.,
Chief Inspector, Division of Contagious Diseases.

HEALTH DEPARTMENT, CITY OF NEW YORK,
PRESIDENT'S OFFICE, NEW YORK, October 9, 1888.

SIR: In compliance with your request of October 5th, I have the honor to inclose a copy of the autopsy in the case of Professor Proctor.

The report giving full details of the examination of the organs has not yet been received.

Respectfully,
(Signed) J. C. BAYLES, President.

Report of Necropsy.

NEW YORK, September 16, 1888.

In accordance with your request, an autopsy on the body of Professor R. A. Proctor was made by us at 2.30 P.M. to-day, at North Brother's Island, and we submit the following preliminary report:

Decomposition was so far advanced that it was impossible to arrive at a definite conclusion as to the cause of death.

The organs presented no evidence whatsoever of pernicious remittent fever, or other form of malarial disease, such as, even in the condition of decomposition presented by the body, would ordinarily be apparent.

The only positive change due to disease which could be made out was in the kidneys, which showed the appearance of old, though not advanced, disease.

The alterations produced in the body by yellow fever are usually of such character as to be nearly or completely obliterated by advanced decomposition.

We are therefore only able to say in this connection that there was no other evident cause of death, and nothing which would be incompatible with death from that disease. The final conclusion as to the cause of death must therefore, in our opinion, be largely based upon the clinical history.

(Signed) T. MITCHELL PRUDDEN, M. D.,
HERMANN M. BIGGS, M. D.,

Pathologists to the Health Department of New York City.

HON. JAMES C. BAYLES,

President of the Health Department, New York City.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varioloid.	Variola.	Typhus fever.	Enteric fever.	Sacred fever.	Diphtheria.	Measles.
New York, N. Y.	October 6.	1,538,164	621	1	12	10	15	9	16				
Philadelphia, Pa.	October 6.	1,016,758	344		13	7	5	3					
Brooklyn, N. Y.	October 6.	805,855	307		5	4	8	5					
Chicago, Ill.	October 6.	800,000	286		13	6	16	4					
Baltimore, Md.	October 6.	431,879	158		7	1	4	5					
Boston, Mass.	October 6.	415,000	20		10	9	1						
San Francisco, Cal.	Sept. 28.	330,000	94		5	1							
Cincinnati, Ohio.	October 6.	255,139	107		2	1							
New Orleans, La.	Sept. 29.	248,000	113			6		3					
Pittsburgh, Pa.	October 6.	230,000	82		6	1	4	3					
Washington, D. C.	Sept. 29.	225,000	96		7	2		4					
Washington, D. C.	October 6.	225,000	92		4	1		5					
Milwaukee, Wis.	October 6.	195,000	68		2								
Kansas City, Mo.	Sept. 29.	180,000	44		4	1							
Kansas City, Mo.	October 6.	180,000	45		8	2							
Rochester, N. Y.	October 6.	120,000	39		1	1							
Detroit, Mich.	October 6.	116,340	78		4	1	6	1					
Richmond, Va.	October 6.	100,000	49			5		1					
Denver, Col.	October 6.	96,000	37		5	2							
Columbus, Ohio	October 6.	93,000	20		4	2							
Toledo, Ohio	October 6.	80,000	6										
Evansville, Ind.	October 6.	53,000	15		1								
Nashville, Tenn.	October 6.	65,153	24		1								
Fall River, Mass.	October 6.	65,000	28		5	1	1						
Charleston, S. C.	October 6.	60,145	44		1								
Lynn, Mass.	October 6.	50,000	17		2								
Council Bluffs, Ia.	Sept. 29.	45,000	3										
Portland, Me.	October 6.	40,000	14		2		1						
Manchester, N. H.	Sept. 29.	41,000	14		1		1						
Burlington, Ia.	Sept. 26.	30,166	6										
Davenport, Ia.	October 6.	30,084	8				7						
New Albany, Ind.	October 6.	30,000	4										
Altoona, Pa.	Sept. 29.	29,546	4										
New Bedford, Mass.	October 6.	26,845	16										
Haverhill, Mass.	October 6.	25,000	10										
Jackson, Mich.	October 6.	22,500	4					1					
Poughkeepsie, N. Y.	October 5.	22,000	9										
Newton, Mass.	October 6.	21,105	8										
Newport, R. I.	October 4.	20,466	7										
Pensacola, Fla.	October 6.	15,000	5										

Tracheotomy in Croup.—"Dr. Valde y Aldebalde, writing in a Spanish journal devoted to the diseases of women and children," says the "Lancet," "urges upon his *confrères* the importance of overcoming their reluctance to perform tracheotomy in croup. He thinks that, if the cases in which this operation is performed in Spain, 'especially those where the result is satisfactory,' were published, medical men in small towns would feel much more disposed to undertake the operation; and the task of reconciling the parents to it would be rendered very much easier. Surely there is enough already of reporting successful cases. What should be aimed at is that a true mirror of practice should be presented to the profession, which is not the case when unsuccessful operations are omitted and successful ones are duly published. Nothing is more difficult, perhaps, than to estimate the results of tracheotomy in croup in private practice, especially under the conditions existing in the homes of the poor."

ANSWERS TO CORRESPONDENTS.

No. 231.—Both currents have been used successfully.

No. 232.—It was published entire in the New York "Sun" for Sunday, the 14th inst.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE CAUSE
AND TREATMENT OF URETHROCELE.*

By THOMAS ADDIS EMMET, M. D.

THE condition which has been accepted as one due to prolapse of the urethra, and known as urethrocele, has generally been regarded as a result of the injury at the vaginal outlet misnamed laceration of the perinæum, and has been considered the direct consequence of a loss of support from below. I shall shortly present what I believe to be the true pathology of the lesion, but at once will state that we may exclude a want of support as the cause, for this condition of the urethra is never found after a first labor if the only other injury is a rupture through the sphincter ani and recto-vaginal septum. This is the condition which does constitute a true laceration of the perinæum, yet, it matters not how long since the injury, nor what length of time has elapsed since the supposed needed support was lost, no prolapse of the urethra can be detected in such a case.

Urethrocele is always found to exist, in a greater or less degree, where a serious double laceration of the cervix has been sustained, and generally those women suffer most from it who have borne a number of children. It is undoubtedly a common co-existing condition with the so-called laceration of the perinæum, but the lesions do not depend the one upon the other. The history of all these injuries will point to either a rapid or a tedious labor. In one instance the integrity of the tissues has been overstrained before nature has prepared them for the test, and in the other the tissues have been overtaxed after their vitality had become impaired. The analysis of a number of my cases of urethrocele indicates that the most common cause of the injury was rapid labors, where a few violent contractions of the uterus had been sufficient to terminate them. Next in importance were found tedious labors which had been completed by the injudicious use of ergot or unskillful instrumental delivery. Notwithstanding the fact that urethrocele is a local injury, I have never met with an instance of its existence alone, but always some damage has been sustained elsewhere in the pelvis, and from a common cause. The damage done to the urethra is always confined to the lower or vaginal part of the canal. Observation would seem to teach that the upper portion never sustains injury unless the whole circumference be lost from sloughing after an uncalled-for delay in delivery, with long-continued pressure from the child's head resting on the floor of the pelvis. It is a fortunate provision that the portion of the urethral canal lying close up under the arch of the pubes should be so well protected from pressure during labor, as the filaments from the neighboring ganglia, which dictate when the bladder should be emptied, are distributed there. The mucous membrane in this part of the canal differs in being more closely attached

to the neighboring or deeper tissues. There is also less sub-mucous or connective tissue under it, so that we seldom see this part of the urethra in a state of prolapse at the outlet, a not uncommon condition in which to find the opposite urethral wall. It is therefore at the more exposed site of the lower or vaginal section of the urethra and from the more movable character of its lining membrane that the injury termed urethrocele occurs.

[Reference was here made to the anatomy of the parts, and the author proceeded as follows:]

We are all familiar with the fact that a distended bladder retards the natural progress of labor, and if instrumental delivery is attempted while it is in this condition, serious damage from laceration, and even sloughing about the neck of the bladder or of the urethra, may result. It has become the accepted practice, that all possible space may be gained, to thoroughly empty the bladder before an instrumental delivery and to see that no accumulation takes place after the head has reached the floor of the pelvis. The rule is undoubtedly a good one, both in theory and practice, but yet, under certain circumstances, the presence of a few ounces of urine in the bladder may be a protection to the soft parts and act as a cushion, for the fluid will adapt itself and escape by the urethra if the pressure be extreme. As a matter of fact, a slight accumulation does take place generally in every labor before the head passes the perinæum, and acts as a cushion at the moment when the strain and pressure are the greatest at the neck of the bladder and along the course of the urethra.

An ample arch of the rami below the pubes undoubtedly favors the progress of labor, but it renders the woman liable to injury of the urethra from the fact that the canal is thus more exposed to pressure. After the head of a large child has passed out from the uterus of a vigorous woman and reaches the vaginal outlet through such a pelvis, and by the force of pains natural to a condition of perfect health, the tissues are always piled up, as it were, in advance of the head, and can only recede from the situation with difficulty. This effect is first shown in the dilatation of the anus and in the rolling out of the tissues from above. The common result is to split the mucous membrane more or less in the long axis of the canal, an injury which may range in degree from a slight and superficial crack to a fissure through the recto-vaginal septum, involving the destruction of the sphincter ani. As the occiput passes under the arch of the pubes, the elasticity of the surrounding tissues keeping it in close contact, that portion of the urethra in advance of the head becomes dilated from the crowding into it of the loose tissue already referred to at the neck of the empty bladder. From this cause partial or complete displacement of the whole mucous membrane and submucous tissues often takes place along the lower portion of the urethra. In addition, lacerations along the mucous membrane of the urethra and in the long axis of the canal are found like those I have described as occurring in the rectum, and these range in depth from a simple crack to a deep fissure. Sometimes the laceration is a transverse one, in front of or behind the subpubic ligament, and thus re-

* An abstract of a paper read before the American Gynæcological Society at its thirteenth annual meeting.

sembles closely the injury resulting from forcible dilatation of the urethra with the finger or other instrument. At times these lacerations extend throughout the length of the canal and involve the meatus, thus leaving the urethral outlet cleft-shaped and patulous after nature has repaired the injury within. I have seen but a single instance where the laceration extended through into the vagina, leaving a fistula. Necessarily this would be a rare result, as there exists loose connective tissue between the urethral and the vaginal passages, which is continuous with similar tissue elsewhere in the pelvis. While the urethral canal itself might be readily split through, the force would naturally be spent in the direction of the least resistance and into the connective tissue; consequently the laceration would be less liable to enter the vaginal tissues which would offer the greater resistance. Nevertheless, this rupture does sometimes occur, for I have seen several instances where a deep fissure existed through the vaginal surface and over a portion of the long axis of the urethra, while the canal itself was apparently uninjured. The only explanation must be based upon the supposition that the urethral edges of the opening, lying in close contact, gradually united, leaving the other portion of the fissure to heal partly by granulation. . . .

We should use the term urethrocele in its true sense and not designate by the same a condition where the urethra has received no injury. I refer to the apparent thickening of the urethra due to the sliding forward of vaginal tissue upon it. This condition also is a result of labor, but the tissues can be readily returned in the direction from which they were displaced. I have elsewhere described the operation for correcting this prolapse, which consists in retracting it and then uniting the fold thus formed, as a crescent, across the vagina on a line higher up in the canal; with this brief reference we need not again refer to the condition.

In a true urethrocele the canal remains sacculated and shortened, but not necessarily patulous. By the aid of a uterine probe it is easily demonstrated that the diameter of such a canal is often greater than its length, but the space is well filled by prolapsed tissue from the bladder, or by its own thickened and diseased mucous membrane, to such a degree as to frequently retard the flow of urine. When the canal becomes thus shortened, from an increase of the lateral diameter, the lesion has evidently followed cicatrization from each end of the wound, leaving, as a constant cause of irritation, a pouch in which a certain amount of urine remains after each emptying of the bladder.

I have frequently recognized this injury as a source of reflex irritation, and have successfully relieved the train of symptoms after others had attributed their own origin to the bladder, uterus, and even to the rectum, and after each organ had been treated unsuccessfully in turn.

In April last I had placed under my care, by Dr. George A. Peters, of New York, about the most complete physical wreck I have ever encountered during my professional life. She was sixty-four years of age and had not been well a day for thirty-seven years, her illness dating back to the birth of her last child. She had given birth to three children; the labors were all hard and tedious, but were terminated naturally, notwithstanding the

heads of the children were very large. From one cause and another she had been unable to nurse any of her children. After a miscarriage, which took place about thirty years before I saw her, it was necessary she should receive constant treatment for uterine or supposed ovarian irritation. But from the time of the menopause, at fifty, irritability of the bladder became the most prominent symptom. She was a confirmed invalid, and for twenty years had relied upon the daily use of morphine as her only means of rendering life endurable, as she expressed it. Vesical irritation for years had been constant, necessitating the emptying of the bladder at least every half-hour, and at times every few moments. Notwithstanding the constant irritation, and that attention had been so long directed to the parts, a diseased condition of the urethra was never suspected, but the symptoms were attributed to the possibility of a stone in the bladder.

This poor woman had become essentially bedridden, her general health was gone, her nervous system unstrung, and withal she was suffering from a constant tendency to a serous diarrhoea, a condition which I have before met with in persons who have long been subjected to the use of morphine.

After the menopause the uterine and ovarian irritation became eliminated. But at my first examination I detected in a cicatricial line the evidence of a deep double laceration of the cervix which had extended to some distance out upon the vaginal walls. After the birth of her last child she had undoubtedly suffered from a septic pelvic inflammation, to the consequences of which, from adhesions, the supposed ovarian irritation was to be attributed. The everted lips of a lacerated cervix appeared, no doubt, as the "ulceration" which, during the course of many years, it had been found impossible to heal. I examined the bladder carefully, but could detect no evidence of disease, and so long as the sound was kept in its regular course there was no special irritation in the urethra. The urethra was nearly as large as a pigeon's egg but more globular; it was firm to the touch, and no special pain was excited until pressure was made upward against the arch of the pubes. The meatus was somewhat constricted and the canal did not seem overlarge until the point of the sound was turned downward, when it entered the pouch. The increased lateral diameter of the canal was not detected until the instrument was turned to either side. Pressure within the angles caused intense pain, and when repeated, while the patient was under the influence of ether, the limbs immediately straightened out, notwithstanding she was fully under the anæsthetic.

After some preparatory treatment to improve her general condition, and after the frequent application of hot water for a week, applied directly against the urethrocele from a jet of a Davidson's syringe, I operated.

The patient was placed on the left side, and after the introduction of a Sims's speculum I passed a No. 12 block-tin sound through the urethra into the bladder, and this instrument I bent so that it would not slip out, and could be easily held by my assistant. By the use of the sound I pushed back into the bladder the prolapse of tissue, and thus emptied the canal. I secured the center of the urethrocele with a tenaculum to steady it, and with a pair of scissors bent at an angle I carefully cut down upon the sound. The opening was then enlarged toward the neck of the bladder and toward the meatus, but without reaching either point, as I wished to preserve the retentive power as well as the urethral outlet. The parts were unusually vascular and the venous oozing was difficult to control. The tissue which lined the cavity was livid in color and detached to a great extent from the vaginal side of the urethra, and, without exaggeration, it seemed fully an eighth of an inch in thickness, and almost gangrenous. I seized in turn

each angle of what seemed to be a transverse laceration, drew out the excess of tissue so as to obliterate the pouch on each side, and cut this off, but left tissue enough to cover the sound which had been retained in the canal as a guide. I then put the urethra on the stretch, and, including all the tissues, drew it out to its natural length by making traction with a hook from each angle of the wound toward the neck of the bladder in one direction and toward the meatus in the other. By a number of interrupted fine silk sutures I carefully brought together, around the wound, the edges of the urethral and vaginal mucous membranes, leaving the button-hole opening extending through the middle third of the canal. The result was that I restored the urethra to its natural length by the operation and formed the canal of a uniform width in correspondence with the block-tin sound which occupied the urethral tract. It is not necessary to describe the steps of the operation at greater length, for I have illustrated the subject fully, and have presented the details in my work on "The Principles and Practice of Gynecology."

At first there was no special improvement, but rather an increase of suffering from the irritation of the bladder; but this was to be expected until after the sutures had been removed and the swelling had subsided. The daily treatment consisted in frequently throwing through the opening in the urethra a gentle stream of warm water whenever it could come in contact with the thickened mucous membrane. Sometimes applications of tannin and glycerin, or of the extract of *Pinus canadensis*, were made, and afterward the parts were covered with a simple cerate to protect them from contact of the urine in its escape while emptying the bladder. After two weeks she began to have less pain locally, and by degrees the quantity of morphine was reduced until finally its use was discontinued entirely.

About the middle of June she returned home, not a well woman, but greatly improved. In fact, it may be said that she was already cured of her local difficulty, as she was able to retain the urine for three or four hours, and had been broken of her morphine habit. The thickened mucous membrane had nearly reached a healthy condition and will continue to improve. To bring this about it was necessary to leave the button-hole in the urethra until some future time, when it will be closed if the parts have then their normal state. It can not be expected at her age that she will fully regain her strength, or that she will be able in so short a time to overcome the habits of an invalid which she has maintained for so many years. But I am certain that she will yet be well enough to get much enjoyment out of her existence, and that for the future she will be free from all suffering in connection with the bladder and urethra.

I had the honor in 1882 of presenting for your consideration a paper on some of the lesions of the female urethra. I then maintained that we had a valuable means for exploration and for treating these diseases by means of the button-hole operation. As my experience of this operation has increased, I have become even more satisfied with the views I then advanced. The operation is not offered as a "cure-all," but, as with the one for closing a lacerated cervix, in properly selected cases it fills a place for which we have no substitute in treating many of the reflex disorders to which women are subject, and which are so closely connected with impaired nutrition and injury to erectile tissues. In these days of heroic surgery the operation has seemingly been overshadowed and has not received the attention which it deserves.

LAPAROTOMY FOR REDUCTION OF AN INVERTED UTERUS.

By PAUL F. MUNDÉ, M. D.,

PROFESSOR OF GYNÆCOLOGY AT THE NEW YORK POLYCLINIC;
GYNÆCOLOGIST TO MOUNT SINAI HOSPITAL.

WHEN, a number of years ago, Thomas suggested and in two instances (one successful) carried out the plan of stretching the funnel of an inverted uterus with a glove-stretcher passed through an abdominal incision, the profession could not but admire the boldness and originality of the idea, although it has as yet been slow in adopting and following it. But in those days (not so remote, either) it was considered proper to relegate laparotomy to the place of a last resort, and amputation of the inverted uterus was preferable to the dangerous experiment of attempting to dilate the constricted ring of the organ through an abdominal incision. And surely the choice of the former operation, mutilating as it was, could not be ascribed to its safety, since, out of fifty-eight cases collected by Scanzoni in 1867, eighteen were fatal.

With the comparative absence of danger now attending aseptic laparotomy, there seemed a chance for a revival of Thomas's operation in a favorable case. While I had seen, in all, six cases of inversion of the uterus, only two were complete uncomplicated inversions; one of these was in Scanzoni's clinic in 1867, and, in consequence of a doubtful diagnosis, the uterus was ligated and amputated, with a fatal result; the other was shown me by the late Dr. Dawson in his clinic at the Out-door Department of the New York Woman's Hospital some twelve years ago, and the inversion was subsequently replaced by him, by what method I do not know. The four other cases were partial inversions produced by fibroid polypi, and were easily reduced after removal of the tumor. Thus I had no opportunity to test Thomas's method in a case where a faithful and persistent trial of the usual rapid and gradual means of vaginal reposition had failed, until a few months ago.

M. W., aged twenty-seven years, married, two children, the last three months and a half old, was admitted to my service at Mount Sinai Hospital on May 29, 1888, during my absence from the city. The last confinement had been easy and natural. Particulars could not be obtained as to the placenta and puerperal state. About a month later she consulted Dr. C. Nicolai, of Harlem, for persistent hæmorrhage, who detected a complete inversion of the uterus, and, as he informed me, made four distinct attempts at reduction of an hour each, twice under chloroform, but without success. The hæmorrhage continued, and the patient was sent by Dr. Nicolai to my service. Dr. B. Scharlau, who acted as my substitute during my absence, made two very determined efforts at reduction under chloroform, and, failing, employed steady pressure with an inflated air-bag for three days, until the surface of the inverted uterus became so raw and its tissue so soft as to cause fear of sloughing. Then mild carbolized douches were substituted. On June 6th a third ineffectual attempt at reposition was made under anæsthesia.

On my return, two weeks after her admission, I found the excessively anæmic and emaciated patient clamoring for relief, no matter how. At the first examination I made a moderate attempt at reduction without anæsthesia, merely as a feeler, and easily found the reason of the failure to lie in the great mobility

of the completely inverted uterus, and the apparent impossibility to secure sufficient purchase on any part of the uterus so as to be able to press it steadily against the contracted ring. The obstruction was so easy of reach through the thin abdominal walls that it seemed to me, as it had seemed to Dr. Nicolai and Dr. Scharlau, absolutely incomprehensible that it should not be overcome, and I appointed the day for the final trial, with considerable confidence that I should be successful.

However, in case I should fail by the usual methods, I had laid down for myself the following plan of action: Abdominal section, stretching of the inverted ring with a Palmer dilator or a glove-stretcher, and then reinversion by the intravaginal hand. Should this combination fail, as I had no idea it would, then I would resort to removal of the ovaries, closure of the abdominal wound, and elastic ligation of the inverted uterus. I so confidently expected to replace the uterus by manual pressure that I had not provided myself with a glove-stretcher, not happening to find one conveniently at hand.

On June 20th, in the presence of Dr. W. H. Baker, of Boston, and a number of gentlemen attending the Polyclinic, I began the attempt at reduction, the patient being thoroughly relaxed by chloroform. For fully an hour, with alternate hands in the vagina, and applying the pressure at every available spot of the uterine surface, employing the fingers of the other hand and a wooden plug as means of counter-pressure and of dilating the ring, I labored to effect reduction until, from sheer exhaustion, I was obliged to desist. The contracted ring firmly resisted all efforts to dilate it. Further efforts seemed unadvisable, as the uterine tissue had become so soft and pulpy from manipulation and pressure, and the wall at spots appeared so thin, as to render its perforation by the fingers probable.

I could not bear to give up the reduction of the organ at that sitting, and therefore proceeded to carry out my original plan. Rapidly making a two-inch incision through the abdominal wall, I pushed the uterus from the vagina upward so as to almost bring the ring into the wound, and first with my fingers and then with a Palmer's steel dilator tried to stretch it apart. Failing in this, I sent for a glove-stretcher, and procured two of ivory from the wife of the superintendent of the hospital. These were disinfected, and first one and then both were inserted through the abdominal wound into the uterine ring down to the very bottom of the inverted uterus and gently separated to their utmost. The ring was thus completely dilated and I expected an immediate reduction. But as the glove-stretchers were slowly withdrawn to allow the *pari passu* reposition from the vagina, at the instant the stretchers slipped out of the ring, the latter closed like a vise; and, although the attempt was repeated again and again, no rapidity or concurrence of action in pressing the fundus upward succeeded in anticipating the contraction of the ring. It seems almost incredible that it should have been impossible to so dilate and keep open the ring, when it was not only easily accessible, but even visible at the abdominal incision, as to enable me to slip the fundus back through it. But such was nevertheless the case, and my spectators will, I think, give me credit for having tried faithfully to save this woman's uterus. As a last resort I followed a suggestion of Dr. Lilienthal, my house surgeon, who assisted me (before the operation, while discussing the possible necessities of the case, I had rejected this plan as ingenious, but scarcely likely to be required), and passed a Peaslee's needle from the vagina through the firmest portion of the fundus uteri and out of the ring and the abdominal wound, attached a long loop of the thickest silk to it, drew the loop out of the vagina, and tied a piece of large, doubled, vulcanized rubber drainage-tube to it, as a fulcrum upon which to exert traction. I chose the flexible tube in preference to a flat button of horn or metal, which were at

hand, because I feared the latter might prove an obstacle at the contracted ring. Then dilating the ring with the glove-stretcher, I tried to draw the fundus up through it by making steady traction on the loop of silk. But the pulpy uterine tissue gave way and the drainage-tube suddenly appeared in the abdominal wound. Realizing that this uterus was beyond saving, I quickly removed the drainage-tube and silk loop, pushed the perforated fundus down into the vagina, and tied an elastic ligature tightly about the body of the uterus as near the vaginal vault as I could reach. Having thus sealed off the peritoneal cavity from below, I proceeded to remove both ovaries and tubes in the usual manner, and, after thoroughly cleansing the abdominal cavity with warm Thiersch's solution, closed the wound. The vagina was irrigated with bichloride solution (1 to 5,000) and loosely packed with iodoform gauze.

The operation had lasted an hour and forty minutes, the oophorectomy and closure of the abdominal wound occupying but ten minutes. The patient bore the severe handling better than her anæmic state would have led one to expect; there was but moderate shock, and no local inflammatory reaction whatever. After the first forty-eight hours, when the iodoform gauze was removed, the vagina was irrigated every three hours with warm Thiersch's solution, bringing away for nearly two weeks quantities of black offensive shreds. The temperature for nine days varied between 101° and 102° F., the pulse between 100 and 130 beats; after that both became normal. The frequency of the pulse was no doubt due to the excessive anæmia, and the slight rise of temperature to absorption of septic matter from the sloughing uterus by the abraded and torn vagina.

On the thirteenth day I made an examination with the Sims speculum and found the elastic ligature loose in the vagina, and the body of the uterus entirely absent, the stump of the cervix being almost on a level with the vaginal vault and the cervical canal apparently closed. The abdominal sutures were removed on the ninth day, and a small mural abscess was found which may have caused some of the temperature, for it immediately fell, and remained down.

From that date recovery was uninterrupted, and on the fifteenth day the patient sat up in an easy-chair.

I am thankful that in this case I followed the old rule to "let well enough alone" and did not interfere with the sloughing process of the ligated inverted uterus by cutting off the sloughing portion, as is advised by most authors, and as the fear of septic infection might have induced me to do. But more than the danger of septic infection I feared the retraction of the edges of the cervical canal and a communication with the peritoneal cavity. I had once seen this occur after immediate amputation of the inverted uterus after ligation (Scanzoni's case), and the autopsy showed the gangrenous border of the cervix turned into the peritoneal cavity, and I did not wish to risk a similar occurrence in my case, if the elastic ligature was removed too early or chanced to slip off after amputation of the sloughing uterus. Besides the practical point to be learned from the treatment of the ligated uterus, the chief lesson taught by this case seems to me to be the failure of the effort to dilate the cervical ring through an abdominal incision sufficiently to permit replacement of the fundus. My hopes had been so unbounded in the easy success of Thomas's ingenious plan that I was and still am intensely disappointed at its failure, the more so as I fancy whatever chance it had of being adopted in suitable cases in the future may be shattered thereby.

I am aware that I may be criticised for not having per-

severed still longer with gradual pressure, and I confess that, had I doubted for a moment that Thomas's method would succeed, I should have felt it my duty to subject the uterus and vagina to still further distension and taxis, which they might ill have borne.

AN EFFECTIVE AND INEXPENSIVE METHOD FOR THE MECHANICAL TREATMENT OF POTT'S DISEASE.*

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THE purpose of this paper is to describe a cheap brace for cases of spondylitis occurring in the dorsal or lumbar regions, for, in the practice of every surgeon, patients present themselves who have not the means to purchase an expensive instrument.

When the patient has been examined and the site of the disease located, the surgeon should take a lead strip, and, while the patient lies in the prone position or stands, he should bend it to conform to the shape of the back, at a point about an inch and a half on either side of the median line, and extending from the neck to the middle of the sacrum, as in Figs. 1 and 2.

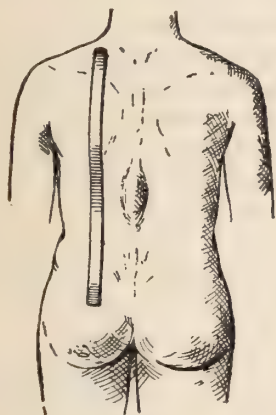


FIG. 1.



FIG. 2.

He should then procure two rigid strips of iron or other metal, and have them bent to conform to the shape of the

pattern lead strips, so that they will fit the back accurately, and these he should have connected at top and bottom by transverse metal strips of the same width and thickness as in Fig. 3. This can be done by the nearest blacksmith or machinist if the lead strips bent into the proper shape are placed before him.

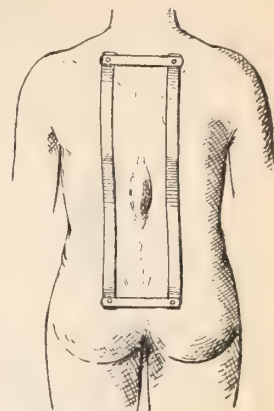


FIG. 3.

If the site of the disease is in the dorsal or upper lumbar region, as shown in Figs. 4 (and 4') and 5 (and 5'), two thinner strips of metal of the same width should be provided, of a length corresponding to the distance from A to B. They should be thin enough to exert a spring effect, and should be riveted at an angle to the sacral extremity of the back frame already described, as shown in Fig. 6.



FIG. 6.



FIG. 7.

Two elliptical plates of thin metal from three to four inches in length should now be attached to the extremities of the short strips by hinge joints, as shown in Fig. 7, and the construction of the metallic portion of the brace is finished.

The surgeon should then pad these elliptical plates with wool or hair, keeping it in place by winding them with strips of moleskin adhesive plaster, and the entire metal frame-

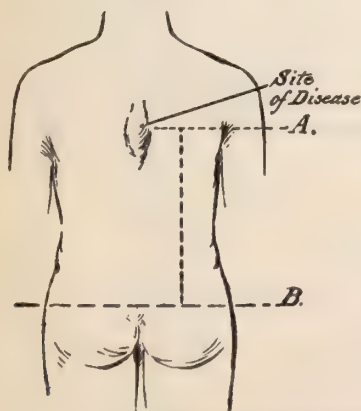


FIG. 4.

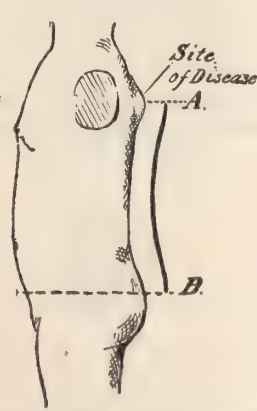


FIG. 4'.

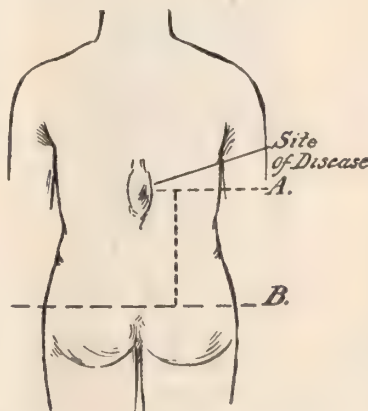


FIG. 5.

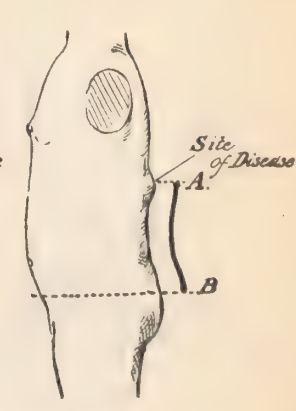


FIG. 5'.

* Read by title before the American Orthopædic Association at its annual meeting, September, 1888.

work should also be wound with adhesive plaster, as in Fig. 8, since this makes an efficient covering.

The brace is now ready for application, and it only remains to secure it to the body by means of broad strips of adhesive plaster (moleskin preferred), as shown in Figs. 8, 9, and 10. The breastplate shown in Figs. 9 and 10 is also to be of adhesive plaster.

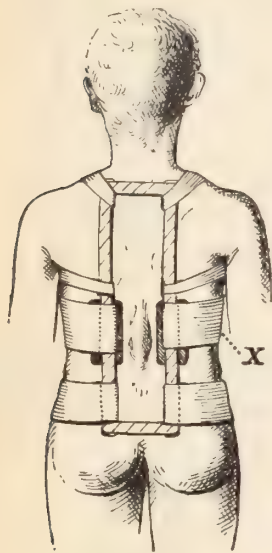


FIG. 8.

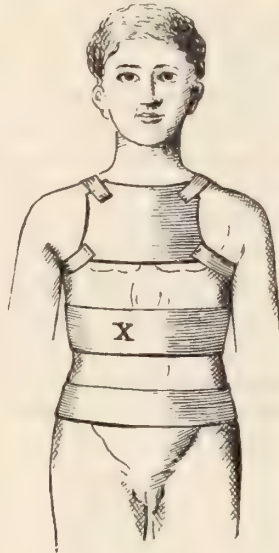


FIG. 9.

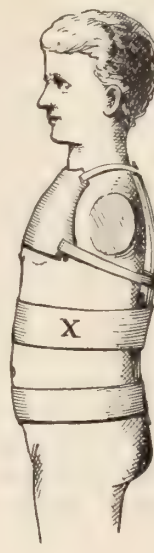


FIG. 10.

The adhesive strip X should be attached to the long rigid back-frame (not the spring strips), and should encircle the body exactly opposite the seat of disease. It will readily be seen that the more tightly the band X is drawn, the greater becomes the forward pressure from the spring strips on both sides of the kyphos, and when the brace is firmly secured against the body (as in Fig. 10), so that the back is held against the long frame, the short strips will become springs which exert an independent automatic power upon the deformity, while the long frame holds the whole trunk in an erect position. If these at of the disease is in the lumbar or sacral region, the short strips are to be reversed, and are attached to the rigid long frame at A (see Figs. 11 and 12). This will be better understood by reference to Fig. 21.

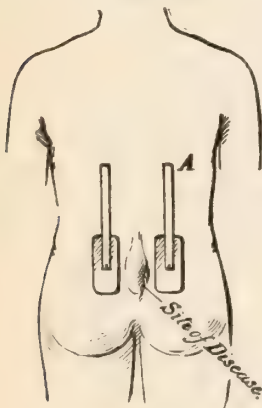


FIG. 11.



FIG. 12.

The principle upon which this brace is constructed is a new one in orthopaedic surgery, and is original with the

writer, and its range of utility is not confined to caries of the spine, but extends to many other deformities.

In studying the mechanical problem involved in the treatment of spondylitis, there are two requisites which must be recognized: 1. Arrest of the disease. 2. Obliteration of the deformity.

Nature points out the direction in which force should

be applied to produce curative results. Who has not noticed the position assumed by a patient with the disease in the stage of invasion? The body is held rigidly erect, the head and shoulders being thrown back; and in stooping to pick an object from the floor, this position is still maintained, the patient having every muscle exercised to hold the spine perfectly fixed and bent backward, the position being similar to that of an equestrian.

Were it possible for this position to be retained continuously, progress of the disease to the stage of deformity would be almost impossible; but it is a natural tendency in unguarded moments for the patient to bend forward, and bending forward from any cause removes the superincumbent weight from the articular processes and proportionately transfers it to the bodies of the vertebrae and their intervening cartilages. The muscles are unable to continue supporting the spine in the super-erect position at all times, and a natural consequence of the occasional bending forward which occurs is increased pressure upon the diseased cancellous bodies, and a hastened absorption of their structure, resulting in the formation of deformity.

Nature's indication for the treatment of Pott's disease is to put a splint on the back of the patient which will maintain this erect position, for, since the tendency of the disease is to curve the affected portion of the spine forward, the center of this curve being anteriorly, our corrective force should be applied to produce exactly an opposite curve to the diseased one, the center of such a corrective curve being posterior to the column. In other words, we must follow nature's lead and hold the spine erectly and slightly curved backward, the tendency of the disease being to curve it forward; and to thoroughly understand the principle upon which the new brace for this purpose is constructed, a patient having a well-defined knuckle is again laid on his back upon a table, the padded edges of which come to the



FIG. 13.

apex of the deformity, the shoulders and head being allowed to fall downward (see Fig. 13).

You will observe, as the patient's head and shoulders

descend, that a partial but physiological and true extension of the spine is effected, the traction force being all that portion of the patient above the seat of disease. There is also a tendency to obliterate the knuckle, and this is only prevented from taking place entirely by such consolidation as has taken place.

We have produced by this position the two effects we consider to be necessary for successful treatment, and have placed the spine in curves the reverse of those it held before the posture was assumed.

If this position could be maintained indefinitely without mechanical support, there would be rapid improvement in the disease; but, as it is obviously impossible, we attempt to embody the forces involved in a brace constructed in two parts. The "table" portion of the brace (and by this we mean that part which is to produce upon the patient an effect identical with the table, as shown in Fig. 13) consists of a firm pelvic band, from which strong padded strips pass up on either side of the median line to the seat of disease (see Fig. 2), and these form the short arm of the lever.

The "backward-traction" portion of the brace consists of a back-frame secured on the pelvic girth by a ratchet or clamp, which allows it to be adjusted at any outward angle, and this regulates the amount of forward pressure upon the kyphos.

The angle at which this back-frame or long arm of the lever is thrown out from the body (see Fig. 14) determines whether the brace shall act as a lever or as a simple fixation brace, and the angle between the long and short arms denotes the degree of power employed, so that when the back-frame is set outward at an angle with the short arm, and is drawn down to the body and fastened firmly (as shown in Figs. 14 and 15), the short arms terminating in the pads press forward upon the transverse processes of the diseased vertebræ with a constant elastic force.

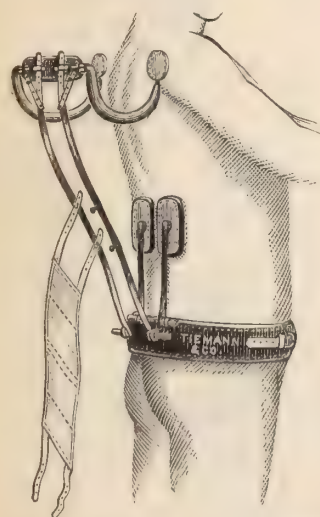


FIG. 14.—Brace for lower dorsal region partially applied.

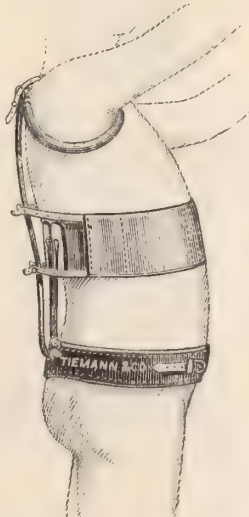


FIG. 15.—The same applied.

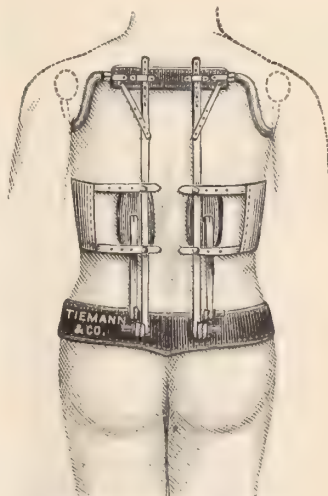


FIG. 16.—The same (rear view).

illustrate this reversal of the lever, so as to obtain sufficient leverage for use in the lumbar region, a patient is laid on the back upon the padded table, and all that portion of the body *below* the seat of disease is allowed to hang over its edge, just the reverse of the position already demonstrated. In this manner also we produce extension of the spine by means of the backward traction of the lower extremities, and also produce the forward pressure upon the kyphos by the edge of the table. It is to retain these effects when the direct position is resumed that we use the lever-brace, and to adapt it to this portion of the spine we reverse its construction, as already detailed.

There are other features of this brace which deserve mention. It will be observed that, if the angle between the short and long arms of the lever is considerable when the long arm is fastened firmly to the body, the bending forward tendency of the upper part of the trunk does not cause the spine to give way at the seat of disease; for, in proportion as the patient leans forward, the short arms press forward upon the kyphos and oppose a resistance to the bending at that point, so that by the brace a curative automatic effect is produced to keep the body erect, and at the same time prevent further deformity while tending to improve that which already exists. Furthermore, the *spring* effect produced by the setting off of the traction-frame and drawing it forward against the body, which is thus held erectly when properly strapped, causes the brace to be held more tightly against the back, and insures a higher degree of fixation than any other form of apparatus in use.

In the beginning of the treatment it is well to have the traction-frame set off at such an angle as to cause considerable pressure upon the transverse processes of the kyphos, and produce thorough extension of the diseased portion; but this angle may be lessened week by week as the case improves, until finally the traction-frame lies directly upon

the pads, and the brace becomes a mere fixation brace, without any leverage whatever.

To further illustrate the action of the brace, if a bent lead strip is taken, and one extremity held firmly by one hand, with the thumb pressed against the knuckle, it will be found that a force comparatively slight (when contrasted with that used in linear traction to produce not so perfect a result) with the other hand will serve to straighten the rod into its original position, knuckle and all. This is precisely

what is accomplished by this brace. We grasp firmly the lower part of the spine as high as the seat of disease, and then, by force applied above, bend the spine backward sufficiently to relieve the bodies of the vertebræ from pressure, and at the same time, with the short arm of the lever,

what is accomplished by this brace. We grasp firmly the lower part of the spine as high as the seat of disease, and then, by force applied above, bend the spine backward sufficiently to relieve the bodies of the vertebræ from pressure, and at the same time, with the short arm of the lever,

corresponding to the action of the thumb upon the lead strip, press forward upon the deformity, and thus, by the use of a very light frame-work, we can exert sufficient leverage to retain the spine in an erect position; and, as this *backward* force is distributed along the entire dorsal and lumbar

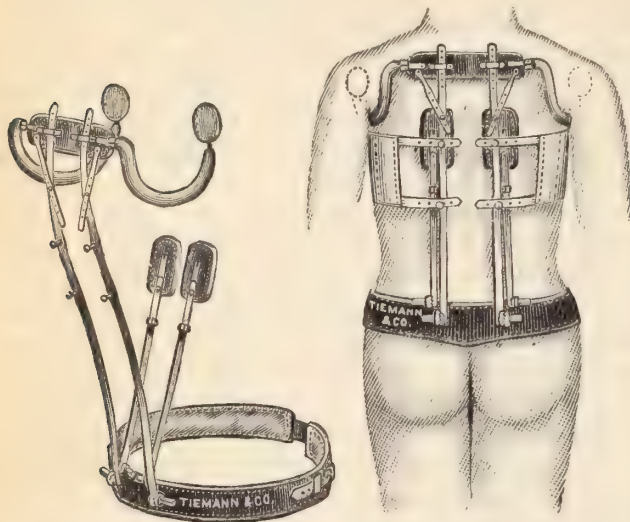


FIG. 17.—Brace for middle dorsal region. FIG. 18.—The same applied (rear view).

spine, while the *forward* pressure is exerted only along the spine from the seat of disease downward, decreasing from kyphos to the sacrum, it will be found that no injurious pressure is exerted at any one point.

For the middle dorsal region the short arms of the lever are longer than in the lower dorsal, so as to be opposite the seat of disease, as in Figs. 17 and 18.

For the upper dorsal region the short arms pass to the seat of disease, making a very light and effective brace for

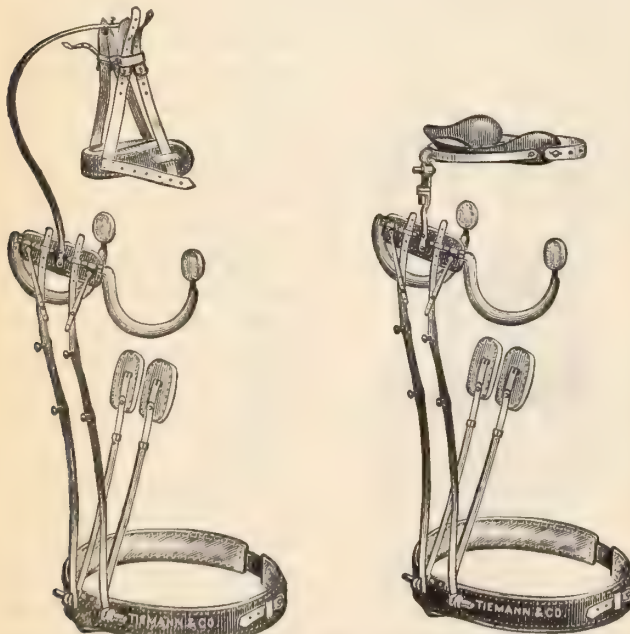


FIG. 19.—Brace for cervical region with jury-mast attached.

FIG. 20.—Brace for cervical region with chin-rest attached.

this region, which is generally considered to be the part of the spine least amenable to mechanical treatment.

For the cervical region, or disease of the first and second dorsal vertebræ, the brace just exhibited (Fig. 17) should have added to it a jury-mast (as in Fig. 19) or a head-piece (as in Fig. 20), which is provided with facilities for fixing the head firmly in any position, by the insertion in the neck-strip, connecting the head-piece to the rest of the brace, of three clamps which are so placed as to secure this object. The choice between the jury-mast and fixed head piece in these cervical cases is usually one which the

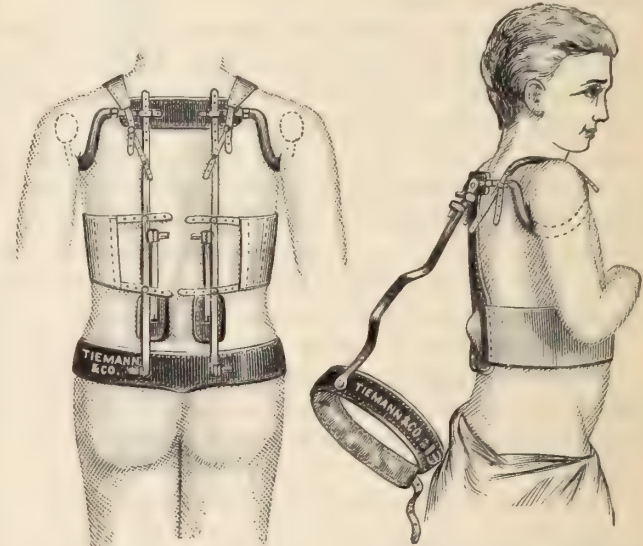


FIG. 21.—Brace for caries of the lower lumbar vertebræ.

FIG. 22.—Brace for upper lumbar region, partially applied.

surgeon is called upon to decide for himself, and is to some extent regulated by the gravity of the case, the latter being usually more effective in caries which is proceeding very rapidly in its course.

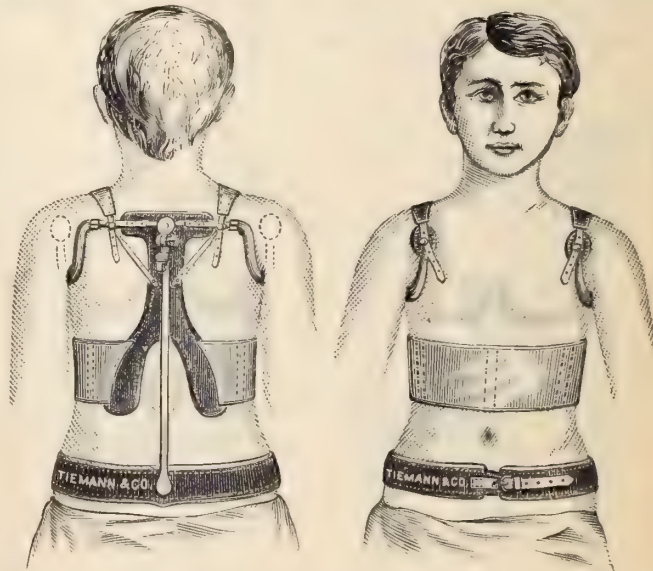


FIG. 23.—The same applied (rear view).

FIG. 24.—The same (front view).

When the disease is situated in the lumbar or, in some cases, in the lower dorsal region, and the short arms of the lever are too short to exert sufficient forward pressure upon the kyphos, the lever is reversed, the point of intersection of the long and short arms being placed in the dorsal region instead of over the sacrum.

From this the short-arm lever strips pass down on either side of the spine to the seat of disease, where they terminate in pads, and the long arm of the lever passes to the sacrum, there terminating in the pelvic girth, as in Figs. 21, 22, 23, and 24.

It will be observed that the brace shown in Figs. 22 and 23 is provided with a compound ratchet at the upper extremity of the long back-strip. This is for the purpose of overcoming the lateral distortion, which is so often an accompaniment of the caries in this region.

The plaster jacket may also be provided with springs, as in Figs. 25 and 26, thus converting it from an active into a passive brace, but, as it does not extend so high up the spine as the brace, it is not so effective.

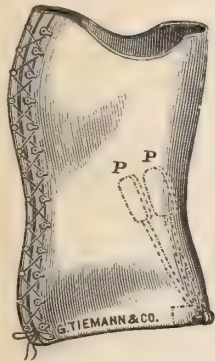


FIG. 25.

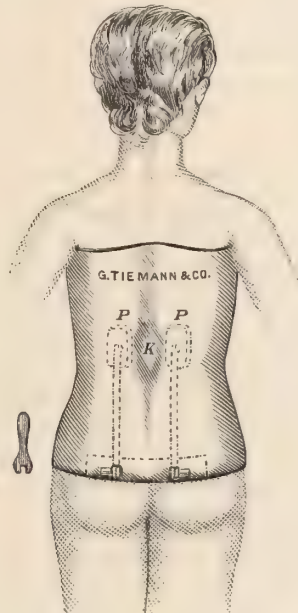


FIG. 26.—The spinal jacket provided with V-springs.

Advantages of braces constructed on the V principle:

1. They hold the spine rigidly in the erect position, and at the same time bring automatic spring pressure to bear at the seat of disease, thus producing the very best conditions for rapid and complete recovery.
2. They are removable at pleasure, and can be worn over an undershirt, so that absolute cleanliness can be secured.
3. The power is adjustable, so that changes can be made during the different stages of the disease without the necessity of purchasing other apparatus.
4. They can be worn with perfect ease and comfort.
5. Those provided with acromial pads do not in the least constrict the thorax, but rather tend to increase its capacity by holding the shoulders back.
6. By their backward traction and forward pressure combined they retain the spinal column in a condition of absolute rest and at the same time relieve the inflamed parts from the pressure of the superincumbent weight, and reduce deformity.

THE FLORENCE, 109 EAST EIGHTEENTH STREET.

IMMOBILIZATION IN ARTICULAR DISEASE.*

By V. P. GIBNEY, M. D.,

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THE foregoing title has been adopted for a discussion of the question whether fixation of a joint about which disease of the bones exists is detrimental, or contributes in the least to the permanent impairment of the functions of the joint.

This question has for many years been a most important one, and the statement has been made time and again, by both orthopædic and general surgeons, that any prolonged treatment of a joint which arrests the functions of the same is the chief factor in the production of ankylosis.

Upon this theory, splints for the protection of joints are constructed, and the American method of treating diseased joints is known as extension with motion.

The late Professor S. D. Gross, "System of Surgery," p. 1091, says:

Protracted disuse powerfully disposes to the occurrence of stiffness of certain articulations, especially those of the fingers, wrist, and elbow. I am aware that the force of this influence has been denied, but certainly not upon just grounds, for experience has shown, and my own observation has repeatedly verified the fact, that this circumstance alone is often capable of producing ankylosis of a very obstinate and intractable character. Such an event need not surprise us if we remember that motion is the appropriate stimulus of an articulation, and that more or less of this is just as necessary to healthy action as food is to the stomach, light to the eye, or sound to the ear.

When motion is suspended for any length of time the synovial membrane becomes dry and stiff, and, eventually taking on inflammation, pours out plastic matter, which effectually obliterates its cavity and so induces permanent ankylosis, on the principle that when the function of a part is destroyed, its structure is essentially changed in its character, if not completely annihilated.

This opinion from the Nestor of American surgery very fully embodies the views of the mass of surgical teachers in this country who have published any contributions to this subject. The existence of stiff joints that have long been subjected to disuse, whether by splints or by disease, I certainly shall not deny. The poetical argument that light is intended for the eye, waves of sound for the ear, etc., is all well enough in its way, but when disease invades these structures, Nature somehow seems to require rest for the tissues diseased, and she usually adopts means to prevent the action of these agents, which in health are grateful and necessary; in other words, throughout the whole animal economy the function of an organ in health is modified in proportion to the impairment of that organ. The consensus of opinion as expressed by the leading surgeons of New York city within the past two or three years is to the effect that the best possible results in elbow-joint injuries are obtained by perfect immobilization after the parts have been placed in normal position.

I need only refer to the discussion following the reading of a paper by Dr. Henry B. Sands, of New York, on the

* Read before the American Orthopædic Association at its annual meeting, September, 1888.

"Use and Abuse of Passive Motion," and a similar discussion before the surgical section of the New York Academy of Medicine.

It is maintained, I know, that stiffness and prolonged impairment of motion often follow the use of splints, about the elbow and the wrist, where fracture or dislocation has occurred. The laity have become fully impressed with that idea, and marked confidence is displayed when Dr. B. tells them that Dr. A. has kept his splints on too long, and the Dr. B. who thus flippantly expresses such an opinion is legion. My own experience in the management of fractures and other severe traumatisms about joints is not large, I confess, still it enables me to state with assurance that the more perfect has been my immobilization, the less stiffness even have I encountered as a sequel.

Surgeons seem to lose sight of the fact, which is indeed a fact, that in the majority of these cases the inflammatory disturbance induced by the trauma is quite extensive and not confined to the site of fracture. Surgeons, I am sure, will admit that the ordinary dressings do not secure anything like immobilization in the strict sense of the term. One surgeon advocates the generous use of cotton batting, in order that subsequent swelling may not be an unpleasant complication; another pleads for temporary dressings, and seems, like the first, to be afraid of swelling. I am sure I shall not be considered captious when I assert that a great many surgeons take hold of an arm timidly and do not know when the fragments are in correct apposition. He who knows when a deformity has been reduced has no hesitation in applying prompt and efficient dressings. In this day of snug surgical dressing the fear of swelling is not so great as it formerly was. We somehow feel that swelling can be controlled by a judicious use of bandages and by calling gravitation to our aid.

So much, then, for acute lesions about joints. Let us now consider the chronic and more insidious lesions with which we, as orthopædic surgeons, have to deal. When the pathology of the last generation was the accepted one, of course immobilizing splints were regarded with much fear. I do not believe that any one of my hearers to-day holds to the doctrine of primary joint lesion in what is ordinarily understood as Pott's disease, hip disease, white swelling, or caries of the ankle. This association, I am sure, subscribes to the osteitic origin of the above-named diseases. We profess to be able to recognize a chronic epiphysitis, for instance, long before any joint effusion or joint tenderness has occurred. Many of us have had the opportunity of studying bone symptoms, and then later on joint symptoms in the same case. The teachings of pathology in both hemispheres have established the correctness of this theory. Many of us, indeed, go a step further, and assert that the majority of these lesions are tubercular in origin. The progress of the disease, too, is toward the destruction of the bone. Inflammatory neoplasms do not occur except during the reparative stages.

In rheumatic lesions the opponents of immobilization find their strongest argument. The pathology of the disease is so different from that in the diseases we have been discussing that therapeutic agents might naturally differ. For in-

stance, in rheumatism there is usually an increase of tissue. In that form known as arthritis deformans the increase proceeds directly from the bone. If perfect quietude to the articulation could be secured, it is argued by some, resolution would take place and one source of irritation at least, which seems to be the cause of increase of tissue, would be removed. Looking, however, upon rheumatism as a constitutional malady, it is difficult to see how the above argument holds good.

There are many good practitioners who maintain that an articular rheumatism is modified greatly by measures they secure for fixing the joint. It was not my purpose, however, to enter into a discussion of rheumatic lesions, but it was my purpose to construct an argument from the pathology and the clinical history of chronic articular diseases in favor of immobilization. Since 1884 I have applied plaster of Paris to nearly every joint in the body. When in consultations I have advocated resection of a knee in an adult patient who had suffered from childhood from white swelling, I have been urged to put the knee up in plaster of Paris and get ankylosis as soon as possible. My experience in such cases has been simply this: the better fit I secured with my plaster dressing and the longer I have kept it applied uninterruptedly, the greater was my disappointment at not finding any ankylosis; in other words, the range of motion was increased by the prolonged fixation. At my clinics I have often had the opportunity of showing the class, by actual measurement, a greater range of motion in cases that had been long subjected to plaster dressings.

I have used the long hip splint without any motion at the pelvic band, not that I believe that the splint for this reason secures immobilization. With my friend Dr. Judson I am convinced that the element of traction plays an important part in the production of fixation.

My cases that are convalescing and those where I have dispensed with a splint do not present ankylosed hips. It has been my custom also to employ the Judson thigh-clasp for securing better immobilization, and in this way the smallest degree of motion is permitted at the knee. Considering, then, the length of time the knee is kept at rest, there should be many cases of ankylosis at the joint; but I think my fellow-members of this association will agree with me that, apart from a temporary degree of stiffness, which passes off with use, there are no ankylosed knees which can be traced to the use of the long hip splint.

Reverting to the pathology for a moment, we can understand how a protective splint—one which prevents pressure about the dense lamina of bone immediately beneath the articular cartilage cells—is the best way possible to prevent ankylosis.

Mr. Macnamara, speaking of this dense layer of bone, says:

It is therefore constantly being renewed from the cells of the deeper layers of the articular cartilage. If such were not the case, this lamina of bone would speedily be destroyed by the pressure to which it is exposed; and, if destroyed, the soft cancellated tissue of the bone would be laid bare, as it is, in fact, in certain forms of disease. Until this lamina of bone has been removed, either by the surgeon or from the effect of dis-

ease, it is almost impossible for the extremities of the bones forming a joint to grow into one another and produce bony ankylosis. (See Macnamara, "Diseases of Bones and Joints," London, 1887, p. 23.)

Mr. Reeves ("Practical Orthopædics," Philadelphia, 1885, p. 384), in commenting upon this spurious form of ankylosis, quotes Paget and Butler, among the English writers, Menzel, Reyher, Teiscier, and Jacobsen, as drawing attention to the danger of prolonged ankylosis. At the same time he says:

It must, however, be borne in mind, as pointed out by Jacobson, that there are certain sources of fallacy which must not be overlooked—*e. g.*, in cases where prolonged rest has been necessitated by an injury to a limb, such as fracture or dislocation, the primary injury may have set up articular mischief which was unnoticed at the time; and I would add that there need not have been original injury to the joint, but changes may have extended to it along the periosteal or medullary vessels.

Mr. Thomas, of Liverpool, has analyzed some of the reputed cases of ankylosis after immobilization, and they certainly do not stand criticism well. In place, then, of tabulating a large number of cases where immobilization has been employed without the production of ankylosis, it would seem to me that the *onus probandi* rests upon those who assert that it does produce ankylosis, and it is to such we must look for cases published in detail. In concluding this short paper let me state firmly my belief that whatever ankylosis occurs in a joint which has been subjected to immobilization, occurs by reason not of the immobilization, but of the nature and intensity of the inflammation and of the inefficiency of the apparatus employed. I do not lay any claim for plaster of Paris in this argument, but I do maintain that this agent should be employed until we can substitute a better agent therefor.

Sarcoma of the Vagina in Children.—Dr. Schuchardt read before the second congress of the German Gynecological Society at Halle last May a paper on two cases of "Malignant Disease of the Vagina in Children." Both had undergone operation in Professor Volkmann's wards. Seven cases have already been recorded in medical literature by Ahlfeld, Sanger, Babès, Demmel, Soltmann, Hauser, and Heintal. In only one case was the tumor noticed at birth; the ages of the patients, when observed by the above authorities, ranged from two to five. The growth usually appeared as an irregular prominence, like a bunch of grapes, and always proved very malignant in its clinical history. The first case occurred in a child, aged seven, who died from recurrence of the sarcoma two months after operation. The second patient was about five years of age. She had fallen ill early in 1885; her nurse then noted that a swelling, the size of a bean, protruded at the vulvar aperture when she coughed. The growth was excised, together with a piece of the vaginal wall, "the size of a ten-pfennig piece," in September, 1885. Six months and two weeks later local recurrence was detected; a tumor, about the size of a walnut, was removed, and with it was taken away the lower half of the posterior vaginal wall. The cut margin of the upper half was drawn down and sewn to the perineum. The patient made a very good recovery, and there was no sign of recurrence in May, 1888. The new growth was in both cases papillomatous; the internal structure bore the microscopic characters of a round-celled sarcoma. Dr. Schuchardt believed that the tumor took its rise from certain papillary structures which naturally exist in the region of the vulva.—*Brit. Med. Jour.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 27, 1888.

EXERCISE IN THE TREATMENT OF HEART DISEASE.

Of late the question of treating heart disease by a plan having for one of its prominent features systematic muscular exercise has been much discussed. A German physician, Dr. Oertel, who is said to have cured himself of fatty disease of the heart by this means, has made a careful study of the matter and has laid down precise rules for carrying out the treatment. Hence the practice has come to be commonly known as Oertel's method, and with some show of propriety, if any man's name must be attached to it, for he at least has succeeded in bringing it to general notice, although, as is remarked by M. Eloy, in a recent review of the subject in the "*Gazette hebdomadaire de médecine et de chirurgie*," Stokes, in his work on "Diseases of the Heart and Aorta," freely advised graduated muscular exercise, methodical gymnastics, and pedestrian excursions in the mountainous regions of Switzerland or on the high plateaus of Scotland and Ireland, and attributed to these muscular exercises a reduction of dropsical effusions as the direct result of the increased cutaneous transpiration and pulmonary exhalation produced by them. Indeed, before Stokes, Corrigan, as M. Eloy points out, had insisted on the importance of reducing the ingestion of liquids in cases of fatty heart—a measure that constitutes no inconsiderable feature of the method as advocated by Oertel.

An interesting discussion of the subject took place at the recent meeting of the Association of American Physicians, introduced by a paper on "Fatty Heart," by Dr. Forchheimer, of Cincinnati, a summary of which will be found elsewhere in this issue. From this discussion and from much that has lately been published on the question, there appears to be good reason to think that Stokes's and Corrigan's advice has been too much neglected in the past, or rather that physicians have stood in too much dread of following it. The error has been on the side of a supposed conservatism, somewhat on the principle of the starvation treatment of dyspepsia that held sway for so many years. Everybody knows, of course, that absolute rest for the heart is out of the question during the continuance of life, but the fear of overstraining the organ has led to a regimen of comparative rest that has apparently been carried too far—far enough, perhaps, in many instances, not only to have balked nature's power of cure, but also to have actually hastened the fatal course of the disease by favoring still further degeneration of the muscular tissue of the heart. It is maintained now that graduated exercise, together with a reduction of the amount of liquid taken into the system and the accessory features of the plan, is really capable of causing a disappearance of fatty deposits and the growth of new muscular fibers—in

other words, of curing fatty degeneration of the heart. There seems to be nothing strained in this contention; indeed, it is somewhat strange that it was not set up long ago, seeing that compensatory hypertrophy has long been a familiar phenomenon.

But the danger is now that the mountain-climbing treatment will be tried too indiscriminately, as is likely to happen in the case of any remedial measure that has only recently come into vogue. It can hardly be doubted that lives have already been shortened by its adoption, either from its having been employed in unsuitable cases or from its having been carried out without due carefulness. This fact, however, while it should serve to emphasize the great need of caution and attention to minute details, ought not to be looked upon as a bar to further trials of the system. It may be hoped that within a short time the indications that justify its employment and the rules that should be observed in its application will come to be understood so definitely that it can be adopted with the maximum of benefit and the minimum of harm.

TESTS FOR MINUTE AMOUNTS OF ALBUMIN.

THE importance of a trustworthy and convenient test for minute proportions of albumin in urine is coming to be more and more widely recognized. The subject is treated of exhaustively and very clearly in a work recently issued in Paris, entitled "*Traité de l'albuminurie et du mal de Bright*," by Dr. E. Lecorché, an adjunct professor of the *Faculté de médecine*, and Dr. C. Talamon, a physician to the hospitals. These authors have devoted much care to a comparison of the principal compound reagents used for the detection of minute amounts of albumin. Those that they have experimented with more particularly are: a mixture of acetic acid and potassium ferrocyanide; a mixture of acetic acid and mercury bichloride; a mixture of acetic acid and potassium and mercury iodide (Tanret's); a mixture of acetic acid, carbolic acid, and potash (Millard's); a saturated solution of sodium chloride acidulated with hydrochloric acid (Roberts's); and a mixture of sodium phosphotungstate and citric acid (Oliver's).

Tanret's test has commonly been considered equal if not superior to all other tests for small quantities of albumin, but Lecorché and Talamon give Millard's the preference. So far as the application of the various tests without the aid of heat is concerned, they say: "We have no hesitation in giving the preference incontestably to the American author." Both Tanret's and Millard's tests, they remark, show albumin in the proportion of 1 part to 200,000 and even 300,000 parts; but, while the disc produced with Tanret's is pale and diffuse, that caused by Millard's is much more distinct, although very thin. Millard's test, they repeat, is the surest and most convenient. Besides the greater distinctness of the albuminous ring produced by it, the substances that may lead to error in drawing deductions from its use are only urates, peptones, and mucin, and they are easily recognized. Urates and peptones are precipitated on gently heating the test-tube at the level of contact,

and mucin, which always causes a dusty turbidity *above* the line of contact, is readily distinguished with a little practice. The authors add that, when heat is employed, Oliver's test shows some advantages over both Tanret's and Millard's.

It is satisfactory to have such definite and authoritative statements of the merits of a particular test, and it is gratifying that the preference is so distinctly accorded to a test devised by one of our own countrymen. Dr. Millard's studies of Bright's disease are well known, not only by his book on the subject, but by a number of articles on it contributed by him at various times to the medical journals. It may be well, however, to remind our readers of some facts connected with his test for albumin. The solution is composed of 2 parts, by weight, of ninety-five-per-cent. carbolic acid, 7 of glacial acetic acid, and 22 of liquor potassæ. When the quantity of albumin to be tested for is very minute, the urine should be clarified and allowed to trickle down slowly upon the solution.

THE SURGICAL TREATMENT OF NOCTURNAL INCONTINENCE OF URINE.

THERE is nothing new in the idea that the nocturnal enuresis of little boys is often due to reflex irritation, nor in the adoption of surgical measures for doing away with certain recognized sources of such irritation, such as phimosis, preputial adhesions, etc.; but a German surgeon, Dr. Oberländer, has lately carried the notion further, and has attributed the trouble to abnormalities of the deep urethra. An account of his views on the subject has been published in the "*Berliner klinische Wochenschrift*," and M. Reymond makes the article the theme of an excellent critical review in the "*Province médicale*."

Into the deep urethra open a number of ducts—those of the prostate, of Cowper's glands, and of the seminal vesicles. It is argued that, although the glands mentioned do not enter upon their full functional activity before puberty, they are not completely dormant even at a tender age. It is true that they are then less disposed than subsequently to organic disease, but it is not to be forgotten that chronic inflammation of Cowper's glands has been observed in early infancy; moreover, that the functional capacity of these structures, though feeble, is real, is shown by the frequent occurrence of erections in infants, and even by masturbation. It can not be denied, then, says M. Reymond, that there are reflexes which take their rise from these glands.

The treatment recommended by Oberländer is by dilatation of the urethra—to be applied, of course, only in cases that have been shown not to be amenable to medicinal treatment or to depend upon reflex irritation from more superficial situations. A dilator corresponding in size to No. 15 of Charrière's gauge, consisting of two separable blades, moderately curved, and provided with an index at the handle, is introduced with antiseptic precautions, cocaineization of the urethra being employed in older children and brief general anæsthetization in infants. The extent to which the dilatation is to be carried is governed by the degree of resistance encountered. The length of time dur-

ing which the instrument is kept in the urethra does not exceed three minutes. Sometimes several sittings are necessary. It is held that the dilatation enlarges the openings of the ducts emptying into the deep urethra and flattens out any abnormal prominences that may exist in it, thus relieving the muscular structure of the bladder from causes of reflex excitation capable of interfering with the due performance of its function. According to Oberländer, who has employed the manipulation in hundreds of cases, sometimes using force, it is free from danger.

MINOR PARAGRAPHS.

THE SITUATION OF THE APEX-BEAT IN CHILDREN.

IN a recent issue of the "Centralblatt für klinische Medizin" we find an abstract of an article on this subject and on percussion of the heart in children, by Dr. W. von Starck, which was published in the "Archiv für Kinderheilkunde." The author's conclusions are that during the first year of life the situation of the apex-beat can not usually be ascertained definitely; that in the majority of instances it lies without the nipple-line up to the fourth year of life, while that situation of the beat grows less and less frequent up to the thirteenth year, when it is no longer met with; that it is not uncommon to find it in the nipple-line during the first year, more common up to the seventh year, and then rarer again until the fourteenth year; that the occurrence of the beat within the nipple-line does not take place during the first two years, rarely up to the seventh year, generally from the ninth year onward, and almost invariably after the thirteenth year; that it is found in the fourth intercostal space almost always during the first year, and then with decreasing frequency; that it is seldom found in the fourth and fifth intercostal spaces during the first two years, commonly from the third to the sixth year, and then again more rarely; that it is seldom found in the fifth space during the first two years, then more commonly, in most cases after the seventh year, and almost exclusively after the thirteenth year; and that it is extremely rare for it to be found in the sixth space in children.

THE EFFECT OF VARNISHING THE ENTIRE SKIN.

THE old story of the sad fate of the gilded child is in danger of being relegated to the limbo of fables if certain experiments undertaken by a Russian physician, Dr. Tecoutjeff, and recorded in "Wratsch," are confirmed. According to an abstract published in the "Bulletin général de thérapeutique," Tectoujeff has subjected eighteen adults and five children to the test, coating six of them with an irritating ointment, eight with a gelatinous mass, and nine with a mixture of diachylon and lard. They were kept in bed from two to seven days, and five times daily the applications were made to the entire surface, except the head and in some instances the palms of the hands. In none of them were any such serious symptoms noted as are known to take place in the lower animals. The author concludes that smearing the entire skin, at least to any degree ever desirable in therapeutics, is absolutely harmless.

STOMACH-COUGH.

A WRITER in the "Deutsche Medizinal-Zeitung" remarks that this is looked upon by most modern physicians as a myth, although the most diverse parts of the economy are held to be the sources of reflex cough, such as the larynx, the nose, the bronchi, the pleura, the œsophagus, the ear, the intestines, the

liver, the spleen, and the female sexual organs. Why not, then, the stomach? he asks. He then gives a summary of a case recorded by a Norwegian physician, Dr. Eduard Bull, in the "Deutsches Archiv für klinische Medicin." The patient was an anæmic woman, twenty-four years old, in whom, beyond a heightened percussion resonance at the apex of the right lung, no other disease could be found than a gastric affection. Pressure on the epigastrium invariably provoked an attack of coughing, and treatment addressed to the stomach cured the cough.

PREGNANCY AS A REMEDY FOR EXOPHTHALMIC GOÏTRE.

A CONTRIBUTOR to the "Progrès médical" calls attention to an old observation of M. Charcot's illustrating the ameliorating influence of pregnancy on exophthalmic goitre, and relates the history of a case of his own in which the same effect seemed to be produced. He concludes that this phenomenon points to an additional therapeutical resource in that disease, but admits that it is not always easy to carry out the prescription, although he mentions no other drawback than the fact that the affection is not confined exclusively to women.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 23, 1888:

DISEASES.	Week ending Oct. 16.		Week ending Oct. 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	49	14	40	10
Scarlet fever.....	84	19	97	12
Cerebro-spinal meningitis....	2	2	1	1
Measles.....	91	11	100	3
Diphtheria.....	67	22	75	18
Small-pox.....	0	0	1	0

The Medical Society of the County of New York.—At the eighty-third annual meeting, held last Monday evening, officers for the ensuing year were chosen as follows: President, Dr. Alexander S. Hunter; vice-president, Dr. L. Bolton Bangs; secretary, Dr. Charles H. Avery; assistant secretary, Dr. William E. Bullard; treasurer, Dr. John S. Warren; censors, Dr. J. Leonard Corning, Dr. Maurice N. Miller, Dr. Daniel Lewis, Dr. Andrew F. Currier, and Dr. Laurence Johnson.

Clinical Instruction in Diseases of the Skin.—Dr. Bulkley's free clinical conferences at the New York Hospital began for the season on Wednesday of this week, and will be continued every Wednesday afternoon at 4 o'clock, the course to consist of about twenty conferences.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 14 to October 20, 1888:*

PAGE, CHARLES, Colonel and Assistant Surgeon-General, Medical Director of the Department, will proceed to and inspect the medical departments at Forts Ellis, Texas; Supply, Reno, Sill, and Gibson, Indian Territory; Fort Leavenworth, Kansas; and the Leavenworth Military Prison, in the order named, and, upon completion of this duty, return to these Headquarters. Par. 1, S. O. 127, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, October 15, 1888.

COMEGYS, EDWARD T., Captain and Assistant Surgeon, is relieved from duty at Madison Barracks, New York, and will report in person to commanding officer at Fort Bayard, New Mexico, for duty at that post, relieving First Lieutenant

William D. Dietz, Assistant Surgeon. Par. 18, S. O. 240, A. G. O., Washington, October 15, 1888.

DIETZ, WILLIAM D., First Lieutenant and Assistant Surgeon, on being relieved by Captain Comegys, will report in person to the commanding officer at Alcatraz Island, California, for duty at that post, reporting by letter to the commanding general, Department of California. Par. 18, S. O. 240, A. G. O., Washington, October 15, 1888.

By direction of the Secretary of War, the following-named officers of the Medical Department will report in person, on October 23, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: GARDINER, JOHN DE B. W., Captain and Assistant Surgeon; GORGAS, WILLIAM C., Captain and Assistant Surgeon; MACAULEY, C. N. BERKELEY, Captain and Assistant Surgeon; KNEEDLER, W. L., First Lieutenant and Assistant Surgeon; MEARNs, EDGAR A., First Lieutenant and Assistant Surgeon. Upon the completion of their examination the officers named will rejoin their proper stations. Par. 1, S. O. 239, A. G. O., Washington, D. C., October 13, 1888.

MUNDAY, BENJAMIN, Captain and Assistant Surgeon, is relieved from duty at Jefferson Barracks, Mo., and will report in person to the commanding officer at Fort Sisseton, Dak., for duty at that post, relieving First Lieutenant John L. Phillips, Assistant Surgeon, and reporting by letter to the commanding general, Department of Dakota. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

PHILLIPS, JOHN L., First Lieutenant and Assistant Surgeon, on being relieved by Captain Munday, will report in person to the commanding officer at Fort Lyon, Col., for duty at that post, reporting by letter to the commanding general, Department of the Missouri. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 20, 1888:*

MAGEUDER, A. F., Surgeon. Ordered to Marine Barracks, Washington, D. C.

STONE, E. P., Assistant Surgeon. Detached from the Richmond and ordered to the Minnesota.

KEENEY, J. F., Assistant Surgeon. Detached from the Minnesota and ordered to the Richmond.

MCCORMICK, A. M. D., Assistant Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to the Vermont.

MOORE, A. M., Surgeon. Detached from Naval Station, New London, Conn., and ordered to the Kearsarge.

AUSTIN, A. A., Passed Assistant Surgeon. Ordered to Naval Station, New London, Conn.

Society Meetings for the Coming Week:

TUESDAY, October 30th: Medical Societies of the Counties of Queens (semi-annual—Garden City) and Rockland (semi-annual), N. Y.; Boston Society of Medical Sciences (private).

WEDNESDAY, October 31st: Auburn, N. Y., City Medical Association; Berkshire, Mass. (Pittsfield), and Middlesex, Mass., North District (Lowell) Medical Societies; Gloucester, N. J., County Medical Society (quarterly).

THURSDAY, November 1st: New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans (Annual—Albion), N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, November 2d: Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, November 3d: Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Obituaries.

Elkanah Williams, M. D., of Cincinnati, died at Hazelwood, Pa., October 5, 1888. Two years ago evidence of organic disease of the brain developed, which almost from the first foreshadowed a fatal termination.

Dr. Williams was born near Bedford, in Lawrence County, Indiana, December 19, 1822. He received his early education in Bedford, and his collegiate course was completed at Greencastle, Ind. He studied medicine in Louisville under the preceptorship of Dr. S. D. Gross and Dr. T. G. Richardson. After obtaining the degree of M. D. he engaged for a short time in the general practice of medicine in Bedford, and subsequently established himself in Cincinnati.

Dr. Williams went abroad in 1852 with the avowed determination to qualify himself as a specialist in general surgery or in one of its departments. Even at this early period ophthalmic surgery most attracted his attention. He first visited France, where the surgical and eye clinics afforded him ample opportunity for study. In Germany, having in the mean time mastered both the French and German languages, he became imbued with enthusiasm after he had familiarized himself with the great and growing advances in ophthalmic science. His determination to devote himself exclusively to ophthalmology was now decided upon, and for a period exceeding thirty-two years he was active as a student, teacher, and writer in that branch.

He returned to America in 1855 as the advance guard of a limited number of men who by their labors and energetic actions deserve the credit of having established the foundation of one of the most scientific and important departments of medical knowledge. Faithfully and zealously did he labor to advance the progress of ophthalmology. To him must be accorded another distinction, for he was the first exclusive specialist in this department in America, as, after his return in the spring of 1855, his attention was confined exclusively to the treatment of diseases of the eye.

Dr. Williams was one of the founders of the American Ophthalmological Society, and was active as a member of the Academy of Medicine of Cincinnati. He was a member of the Ohio State Medical Society, of the American Medical Association, and of several other American and European societies.

His aid and support were never withheld if the cause of medical learning could in any way be advanced. He was a rigid believer in professional etiquette, and most scrupulously upheld it.

Those who knew Dr. Williams can associate with the memory of the man only characteristics worthy of unqualified admiration, appreciation, and respect. He was always cheery, genial, courteous, and obliging to his professional colleagues. He was a clear and careful writer, and his subject was invariably handled in a terse and complete style. As a lecturer he excelled, and was both instructive and entertaining. The unwritten history of his life and of his active professional work, so replete with good, will again and again claim for him recogni-

tion and appreciation, and will be a far more lasting, though a silent, tribute to the memory of his name than could be conveyed by the most carefully worded expressions of eulogy.

John William Schmidt Arnold, M. D., formerly of New York, died at Sewanee, Tennessee, on Saturday, the 20th inst. He was a native of Charleston, South Carolina, but had spent most of his life in New York, and for a number of years he was professor of physiology in the Medical Department of the University of the City of New York. About four years ago, being in failing health, he went to Tennessee, and soon became engaged again as a teacher of physiology. Dr. Arnold had peculiar gifts as an experimental investigator, and much of his work, particularly in micro-photography, was of a high degree of excellence. As a companion he was exceedingly interesting, and as a friend he was highly esteemed by those who had the good fortune to stand in that relation to him. Although not at any time a practitioner of medicine, he was always keenly alive to the honor and welfare of the profession. For the greater part of his life he was an invalid, and it is undoubtedly owing to that fact alone that he was not more widely known and appreciated.

Letters to the Editor.

THE TREATMENT OF ACUTE ABSCESES.

NORTH RIDGEVILLE, O., October 17, 1888.

To the Editor of the New York Medical Journal:

SIR: I have just read in the Journal the interesting paper on "The Treatment of Acute Abscesses," by Leroy W. Hubbard, M. D., and should like to ask him several questions through the Journal.

What would be his treatment from the time the inflammatory process had reached that stage at which suppuration was an inevitable result, up to the time he would deem it expedient to make an incision? It is evident that the "question of the prevention" should be dealt with before this stage has been reached, and what should be done in the interval? Do not the popular and time-honored poultices which are used so extensively before and after the incision have a destructive effect upon the tissues and a tendency to increase the area of suppuration?

Having used the antiseptic treatment in the last stage of acute abscesses, I can agree with Dr. Hubbard as to its superiority, but I should like to hear from him about the questions I have asked.

J. S. BUTLER.

YELLOW FEVER.

63 WEST NINETY-SEVENTH STREET, NEW YORK, October 4, 1888.

To the Editor of the New York Medical Journal:

SIR: Just at this time the Jacksonville epidemic has brought the questions in regard to yellow fever prominently before the profession, and a case which occurred under my observation may be of interest to your readers. I therefore send it to you for publication.

During July, 1885, I was the surgeon in charge of the Pacific Mail Steamship San Juan, plying between the ports of San Francisco and Panama, and during our stay in the latter port I was called to a Chilano bark anchored in the harbor. The bark had left Valparaiso eight weeks previous with a clean bill of health, that port being free from all fever. Her cargo was baled hay. She reached Panama after a seven-weeks' healthful and uninterrupted voyage. Six days after reaching port the captain's

little boy, aged eight years, was taken sick, and his case was pronounced yellow fever by a physician from Panama. Three days later the mother was taken with the same symptoms and I was sent for. I found her evidently suffering from yellow fever; high pulse, injected watery eye, temperature 103.5°, urine albuminous, headache, and vomiting. The matter ejected from the stomach was even then tinged with more or less blood; moreover, on physical examination and questioning the captain, her husband, I found that she was at or very near the full term of pregnancy. This was in itself enough to make me give a very grave prognosis, but, when I took into consideration the surroundings of the patients, it made both cases almost absolutely hopeless in my mind. The stuffy little cabin of a sailing ship, eight feet wide by twelve feet long, stinking of bilge-water, and the noxious gases thrown off by decomposing water-soaked hay, were fearful surroundings for a parturient woman; but, when two cases of yellow fever were superadded, it was something awful to contemplate, not taking into consideration the inability to procure proper nursing. In both cases I used the routine treatment: evacuation of the bowels, jaborandi and stimulants, sinapisms and morphine, restricting the diet to milk and lime-water.

The following day I found the eight-year-old boy moribund, and he died at 4 P. M. from exhaustion without signs of internal hæmorrhage. With the mother there was little or no change. That night I was called over to the bark at 9.30, and found that uterine contractions had begun, the os being quite dilated. Three hours later she gave birth to a living and apparently healthy boy, after a normal but rather weak labor. Following upon this there was more or less uterine hæmorrhage, which was easily controlled by ergot. The next day the patient seemed to improve; her mind was quite clear, her temperature 100.5°, and there was no vomiting. I then began to have slight hopes for her life. At 5 P. M. I was once more suddenly sent for and found the woman in a condition of partial collapse, temperature subnormal, 97.5° F., pulse rapid and thread-like, respirations 43 to the minute, and ejecting vast quantities of coagulated blood from the stomach—in other words, black vomit, my efforts to stop which proved fruitless. Neither the subcutaneous injection of ergotine nor the external application of ice seemed to have the slightest effect on her. She died at 10.45 in a comatose condition. The strange part of this history is that the infant born during the height of yellow fever of the mother and in such fearful hygienic surroundings survived, and two months and a half later was as fine and healthy a specimen of a male baby as I have ever seen, and up to that time, when I lost sight of him, had not had a day's sickness since his birth.

This only illustrates one point, and that is, that yellow-fever patients may bring into the world children which will live and show no signs of the awful poison under which the mother succumbs, showing that, if yellow fever is dependent upon a specific germ, it does not always permeate the placental circulation.

JOSEPH N. HENRY.

Proceedings of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

Fifth Annual Meeting, held at New York, Tuesday, Wednesday, and Thursday, October 9, 10, and 11, 1888.

The President, Dr. JOHN CRONYN, of Buffalo, in the Chair.

The President's Address.—The PRESIDENT read an address devoted to the relations between the medical profession and the

public as they met at the bedside. He questioned the propriety of the publication in newspapers of the events of the sick-chamber where prominent men were the patients, and showed the unnecessary mischief which arose. The public could not rightly judge of either the mistakes or successes of physicians, and yet with their limited knowledge they did judge, and constant injustice was done to the reputation of physicians by both underestimation and overestimation. Especially he deplored the want of confidence in the ability of physicians and the resources of medicine thus given rise to in the public mind, which was of great detriment both to the public and to the profession. The public needed education, not in medical learning and as to the limitations of the art, but in the power to distinguish between the true and the false members of the profession, and to choose the genuine and responsible men. He advocated a still higher general standard of preliminary medical education, but insisted that the true physician was born, not made. He thought the peculiar capacity needed was an inherited one largely. He regretted that the ambition of the family, personal aspirations, etc., carried so many unqualified men into the medical profession whose genius really lay in other directions. Swift action, immediate judgment and intuition, and rapid deduction he considered the indispensable capabilities for a physician who was to be successful at the bedside. The scientific spirit had its laboratories, and allowed years in which to solve problems; the lawyer could get delays and call in aid; the clergyman had fixed lines to work to, and resources not of his own making; but the physician must think quickly and correctly. He must act on the moment. He had usually no chance to revise his decisions, do his work over better, or appeal to others for aid.

The faculty of reverence was the second great requirement for the physician, in order that he might have power to render true service in the complicated troubles, often as much moral as physical, of men and women as he found them. A high sense of responsibility in the calling and dignity in personal character were needed to command their trust and obedience in matters of which they had no knowledge. If this quality were more demanded by the public and cultivated more by physicians, the confidence of the former could be obtained on a better basis than a reputation for scientific skill could give. The respect paid to it was of too questioning a sort. Unfair estimates were constantly made which hampered both the public and the profession in coming into a useful relationship. The office of a physician in a community should become an almost sacred one.

A Case of Anæsthesia by the Inhalation of Nitrous Oxide, supposed to be the First on Record.—Dr. OLIVER P. HUBBARD, of New York, read a paper with this title. Sixty-seven years ago, in Rome, Utica County, a Dr. Stockman had been giving exhibitions in a hotel of the exhilarating effects of nitrous-oxide gas. A young man had gone secretly into the room where the gas was kept and taken his fill. He had been found in a condition of complete insensibility, from which he had emerged with marked symptoms of intoxication.

Forced Respiration in Cases of Narcotic Poisoning, Drowning, and Shock, with Exhibition of Apparatus.—Dr. G. E. FELL, of Buffalo, read a paper with this title, distinguishing between artificial and forced respiration, and showing the advantages of the latter in narcotic poisoning. Cases were given where, after Silvester's method of artificial respiration, atropine, and other appliances had failed to restore, by opening the trachea, putting in a tube, and keeping up respiration by a bellows for several hours, life had been brought back. In some cases, where heart-failure was imminent and the blood was nearly black, the method had succeeded, having to be kept

up for many hours while the effects of continued absorption of the narcotic lasted. Sometimes fifteen hours of this were needed before respiration would go on by the patient's own power, and then at intervals it had to be supplemented by the bellows. In one case recovery had been obtained where two ounces of laudanum had been taken and severe hæmorrhage had taken place from a cut throat. Six ounces of saline solution had also been used; but forced respiration had to be given for a total of twenty-four hours. In this case the hypodermic injections of stimulants, not being absorbed, led to abscess which delayed final recovery for months. The air used was heated to 100° F. The method had not the disadvantage of exhausting the patient as artificial respiration always did, to say nothing of its using up the physician's strength also. In some cases of drowning, forced respiration could be administered by intubation instead of tracheotomy, but the latter was better for long application, as it left the mouth free for the administration of medicines and food. The value of the method in drowning was dealt with, and the opinion was expressed that it would also aid the vital forces to rally in conditions of shock. He believed artificial respiration did not supply enough air to the lungs to carry on life in prolonged cases of narcotism.

Discussion on Nosography.—Dr. A. L. CARROLL, of New Brighton, read a paper in which he reviewed the difficulties of making a uniform classification of diseases. He believed that anatomical investigation carried to its final limits would be competent to determine the character of every disorder. In its modern application, anatomy covered structure and functional activity. Pathology was but the perversion of normal physiological processes. The author reviewed the unmeaningness and contradictions of the existing medical names based on appearances and symptoms. He spoke particularly of the naming of diseases from men who had described them as leading to obscurity, and of the confusion now existing between the terms used in different countries for the same disease. The task of making a new nomenclature was a very great one, but he thought it should at least be begun, and on a Latin or Greek basis. Classification should be founded on differences rather than on similarities, proceeding from the individual to the variety, species, genus, order, and so on successively, as these differences became wider and characteristic of larger groups. This plan was followed in botany and zoology. A sorry sort of empiricism would result from the general adoption of Moxon's dictum that the physician "must know diseases not as the zoologist knew his species and his genera and his orders, by descriptions of comparative characters, but as the hunter knew his lions and tigers." He who "went a-gunning" therapeutically with such superficial lore would be apt to waste snipe-shot on a rhinoceros or explosive bullets on a reed-bird. This lion-and-tiger kind of notation almost invariably degenerated into mere symptomatology and was responsible for the ambiguity of many death-certificates and for the shallow diagnoses which so often discredited the profession and injured the patient's chances for rational aid. It had led to regarding a prominent effect or a congeries of effects as a morbid entity, and had afforded ground for the irrational dogma of Hahnemann that "the totality of the symptoms constitutes the disease."

Of the precise position to be assigned to microbes in relation to disease it was not possible at present to speak with certainty, but their intrinsic potency for evil had probably been overestimated. A few infectious diseases were, without doubt, associated with the presence of peculiar micro-organisms; in others none were found, or else too many, and it was impossible to say which of the several cocci and bacilli should bear the pathogenetic blame. The media present in the body were apparently as important as the bacteria in determining diseases. Individuals

were unequally susceptible. The field mouse and the domestic mouse resisted each other's septicæmic schizophytes, so called. The same microbe produced different effects in animals of different genera. In laboratory experiments it had been shown that the same ferment might evolve different products, or various ferments the same product, according to their environment. Apparently several contagia might arise from an exaggeration of common putrefactive processes.

There was evidence going to show that the action of both ferments and bacteria was catalytic, and that the chemical product of fermentation—the real *materies morbi*—depended as much upon the character of the fermenting medium as upon the micro-organism whose activity gave rise to what we now called ptomaines, and even more. But, as it was believed by some of the best investigators that ptomaines might be generated by the degraded action of the tissue-cells themselves, might not the somatic development of some of these ptomaines prepare the soil for a bacterial infection?

For these and various other reasons he believed that a classification of diseases could never be made on the basis of the microbes credited with their causation. He thought, however, that words in current use, if not of too irrational origin, might be retained when their meaning was clearly defined and generally accepted; thus "chemistry," "surgery," "electricity."

Dr. EDWARD G. JANEWAY, of New York, speaking in answer to the question whether it was possible to found a new general classification based on anatomy, said that he knew it was not possible. We had not the knowledge on which to found such a system, and no one word or phrase could adequately represent that knowledge if found, on account of its complexity. Thus, in the case of typhoid, the disease would need to be described by its ætiology traced to the final anatomical effects.

Spirochætæ, even if proved to be a complete cause for relapsing fever, would never, as a name for that disease, convey to his mind so clear an idea as the present term did. On the other hand, in trichinosis the most evident result of anatomical investigation was the micro-organism, which was here the causative thing also, unless we took the inflammation in the muscle as the anatomical basis of the disease. General nervous diseases we had no anatomy of. He thought that for local affections anatomical names were more possible. As for personal names applied to disease-processes—such as Graves's disease or Basedow's disease—he did not know how anatomy could here offer a better name. These names gave the better idea; they did all which any name could, for they stood for a large group of symptoms which had behind them unknown changes in the sympathetic system and elsewhere. He concluded that anatomy, ætiology, and common usage all needed to be respected. An international agreement on terms for the same disease, he thought, would be a good thing.

Dr. F. W. ROSS, of Elmira, read a paper in answer to the same question. He thought words, whatever based on, could not be carried to the same exactitude as our knowledge on a given point, nor be arranged so as to speak volumes, without the aid of the imagination. Undoubtedly, a vocabulary of technical terms was needed in every science and indispensable to its progress. However, to be satisfactory was not necessarily to be exact. Terms in many, perhaps most, instances must allow of much latitude in their applications to be satisfactory. The complex of symptoms and the total departure from health which we recognized as parts of disease related about equally to anatomy and function in its wider sense. Thus the passage of three pints of urine instead of two might be anatomical; but we must recognize in diseases a process which carried the material structures through a series of successive changes. No name

could cover all the conceptions connected with this process. Names of diseases were only guide-boards to the direction of our thoughts. He believed that function affected structures quite as often as structures modified functions; but, as we knew most about anatomy, the majority should rule the minority in weighing the elements of our present knowledge against each other. The subjective symptoms often pointed to the anatomical state. Incorrect anatomical names did not convey practical error, for distinction was needed more than description, as in the names of individual men which might once have been descriptive. Numbers would do as well as names to designate diseases by, so long as a universal set of figures was recognized. Constant minute changes in terms corresponding to additions to our knowledge would not be received by most; they would, in fact, be rejected with disgust. He concluded that we should content ourselves with looking for a satisfactory classification merely.

In answer to the question, "What general principles should govern classification and nomenclature, irrespective of their particularization in medicine?" M. L. BRITTON, Ph. D., of New York, read a paper dealing with the questions of a new nomenclature from the point of view of a botanist. A slight attempt had been made, he said, to classify minerals by their appearance to the eye, in families, orders, etc. Botanical names had first been given on the ground of a fancied resemblance, or after a locality, or from the name of the individual who had described a given variety. The strict meaning of these terms often gave a very incomplete or an incorrect conception of the plants they were applied to. To avoid duplications where a number of writers had given different names to the same plant, a date had been arbitrarily selected names used previous to which no account had been taken of. The names then in use were taken as a standard, and subsequent namings were recognized in strict order of priority. Thus a fixed nomenclature had been attained in botany. He thought a classification of diseases possible by orders, species, families, but that much original work and skillful adaptation would be necessary.

Dr. E. M. MOORE, of Rochester, thought it self-evident that our names must be based on anatomy. Their application was difficult, but the effort was one which was instructive. When we named diseases after individuals, it was commonly because hardly anything else was known about them, as when we first recognized Bright's disease. With more knowledge, better names were employed by degrees. Thus, in the profession, "nephritis" had taken the place of "Bright's disease." Dropsy had once been a recognized disease; now we looked to the cardiac anatomy for the name of the condition in which it occurred. Where bacteria or their products were the most we knew of a disease, there he would name it, provisionally, from the bacterium. Professor Gouley, he said, made anatomy embrace physiology, chemistry, embryology, and bacteriology, as well as descriptive anatomy—whatever we arrived at by *a cutting*, in its broad sense.

The question "What place in nosography should be assigned to bacteria, ptomaines, leucomaines, and 'extractives,' respectively, from a bio-chemical or from a clinical view point?" was discussed by Professor E. WALLER, of New York. He gave a review of the understanding which chemists had come to have of the composition of the products of plant and animal life. Even in the case of the carbon compounds it had been found possible to replace one or more of the component atoms by chlorine, sulphur, arsenic, or bromine. We knew that alkaloids might be produced by animals as well as by plants, the ptomaines of cadavers. Leucomaines were not dissimilar. They were mostly found during life, but some were common to both living and dead bodies, and the distinction would probably

not be a lasting one. In regard to the composition of ptomaines, nitrogen, sulphur, and phosphorus were known to be present. They were volatile unstable bodies, some of which could be represented chemically as ammonia in which more or less hydrogen was replaced by the radicle CH_3 , forming dimethylamine, trimethyldiamine, etc. Their action in the case of the poisonous members of the series when taken into the living body resembled that of the pyridic bases. Some produced a rapid dilatation of the pupil and weakening of the nervous centers, others loss of muscular contractility, others loss of cutaneous sensibility, others a slow action of the heart, others convulsions, others somnolence and torpor, and others pallor with profuse flow of the secretions. He thought that the ptomaines of cholera and typhoid had been found beyond much doubt.

All ptomaines, leucomaines, and extractives were converted albumins. Leucomaines were midway between ptomaines and extractives, without definite boundaries between them. They were divided into groups named uric and creatinic, from resemblances to urea and creatinine respectively. Sixteen were known. All represented progressive changes in albumin. All but one contained oxygen. They had been found in expired air, saliva, blood, brain, urine, pus, and the digestive tract. The progressive changes being interfered with so that retention occurred at some intermediate stage, or by-forms arising as a result of the interference, diseases might at once be produced. The neutralization of these products, even where made by bacteria, must, he thought, be more important than the destruction of the micro-organisms.

Dr. N. B. SIZER, of Brooklyn, read a paper bearing on the same question. He remarked that the ptomaines mostly arose in connection with animal and not vegetable putrefaction or decay. The majority were inert, a few were violent poisons. Their quality in this respect varied widely with variation in a large number of factors. Prominent among these were the character of the soil in which the microbes found themselves, the temperature, the amount of air supplied, the moisture of the pabulum, and the stage of the process. The same bacilli might thus produce entirely different products by being removed from warm foul water to pure or cooler water. The vinegar-fungus, which split up ethylic alcohol, had no effect on amylic alcohol and converted propylic alcohol into propionic acid. Viewed at large, they were transition products through which bodies were carried back from the animal and vegetable to the inorganic kingdom.

It had always been known that putrid foods produced sickness, but more lately we had learned that there were special poisons in them, and in stagnant water as well. It had been found that the vapor arising from putrefying animal substances produced in animals a disorder similar to typhoid fever. Panum, writing in Danish in 1856, had been the first to show the true character of the poison present in putrid flesh. He obtained from decaying dog's-flesh a non-volatile substance, insoluble in alcohol and proof against high temperatures. He found its effects comparable to those produced by the venom of serpents, or by curare and vegetable alkaloids, and without analogy to the symptoms of typhoid, cholera, pyæmia, or anthrax. Large doses injected into the veins of animals were followed by violent cramps, involuntary evacuations, labored breathing, pallor, feeble pulse, mydriasis, and proptosis, soon ending in death. Panum had also extracted by alcohol a substance which produced prolonged sleep without other disturbance. Other investigators had found at a particular stage of decomposition a ptomaine resembling atropine and hyoscyamus in effect. This had been found in typhoid cadavers, and might have a relation to the belladonna-like delirium which was seen in the later stages of

typhoid. Other substances resembling coniine, nicotine, and digitaline, respectively, had been found, and another producing tetanus, great mydriasis, paralysis, and death. In 1871 Lombroso had found that moldy corn-meal, sometimes used in Italy in making *polenta*, contained a body that produced a tetanus like that of strychnine, which explained the severe outbreaks that had repeatedly followed the eating of *polenta* made of "heated" meal. The hog-cholera bacillus and the anthrax bacillus each produced a poisonous ptomaine to which the disease caused was due. Shell-fish, such as the common mussel, sometimes produced another class of ptomaines, causing in some instances acute gastro-intestinal inflammation; in others, nervous prostration, with urticaria and extreme dyspnoea; in others, an intoxication like the alcoholic. Some shell-fish were always poisonous, others only while they lived in dirty water, and of these oysters were examples. In putrid fish a poison like muscarine had been found. In Germany many cases of poisoning by sausages had occurred. These sausages were made of the flesh of sheep and goats, chopped up, and mixed with blood which had been collected and kept for days in large vats. The size of the skins in which the meat was stuffed was such that, in smoking, the center of these sausages was not cured, and was often in a semi-putrid condition. Recently, in Holland, 256 soldiers and 36 civilians had died from eating the flesh of an animal that had died of puerperal septicæmia.

Canned meats usually owed their poisonousness to the presence of ptomaines, and not to the action of the soldering fluid used. In one instance canned apricots had contained a poison due to some alteration by decay, and resembling tyrotoxin in its effects. It had killed the child of a nursing mother in a few hours, the mother in forty-three hours, and, after an illness of six days, the father also. Other cases of poisoning were noted where ham, cheese, ice-cream, or milk had been at fault. He substantially agreed with Professor Waller and previous speakers respecting leucomaines and the place which our knowledge in these matters should have as respected nosology.

In the discussion which followed, an instance was given by Dr. C. W. BROWN, of Elmira, where the blood of a horse which afterward died of tetanus, being injected in small amounts into the veins of kittens, produced tetanus in them, ending in death, with but little sign of inflammation at the site of the injection. It appeared to him that some leucomaine or ptomaine must have been present in quantity in the fluids of the horse.

The Origin and Treatment of Uric-acid Calculi of the Kidney.—Dr. W. D. GARLOCK, of Little Falls, read a paper with this title. He thought the time gone by when the so-called uric-acid diathesis was taken as a sign of genteel birth or luxurious living. We knew it occurred in the poor seamstress as well as the corpulent alderman, arising as often from fatigue and hunger as from lethargic satiety. Alimentation, metabolism, and excretion were all concerned in its production, though formerly incorrect alimentation had been credited with being the sole factor; and afterward, when uric acid was first discovered, defects of excretion had been made responsible. Uric acid seemed to be one of the final products of proteid metabolism on a different line of oxidation from that producing urea, and not so fully oxidized. Normally, eight to ten grains of uric acid, in the form of urates of the alkali metals, were excreted, the amount being increased by animal food. It was found in the blood, liver, and spleen, as well as in the urine. Its constant presence in the spleen in amount was remarkable. It was found there in the case of herbivora also, whose urine normally contained none. In pyrexia the increase of uric acid in the urine seemed to be connected with the swelling, and therefore presumably the activity, of the spleen. The sodium

urate might arise in the liver from imperfect metabolism of glycogen or by combining with the sodium of the sodium phosphate of the blood. This conversion into the soluble urate might fail to occur, in which case ordinarily it was deposited in the urine in the form of fine crystals, usually microscopic in size. But special conditions caused other forms of concretion, leading to the building up of calculi. In 1857 George Rainey, by placing saturated saline solutions in mucilage, had formed spherules as hard as pearls, having radial and concentric organs. So probably colloid substances present in the pelvis of the kidney, such as muco-pus and pus, especially if degenerated, did much to cause the building up of calculi.

The treatment of the diathesis had relation, then, to alimentation, metabolism, excretion, and whatever might be found to influence them; also to local causes influencing the production of colloid matters. There were reasons for not employing a purely vegetable diet. Some animal proteid in the diet perfected the processes of digestion and elimination, improved circulation, blood-pressure, respiration, and the growth of red blood-cells. The large amount of carbohydrates needed when meat was disallowed exhausted the oxidizing power of the tissues and the depurative function of the liver, and led to an increase of the production of uric acid. In bilious persons uric acid was commonly present in large amounts. A rich carbohydrate diet, which was so well known as favoring bilious attacks, was probably thus connected with uric-acid production. A mixed diet in great moderation was, then, the most desirable one. A milk diet, from its perfect digestibility, was very good. Free drinking of water, exercise, bathing, cheerful surroundings and occupation were advised as valuable adjuncts in this general line of treatment. Tonics, pepsin, iron, and laxatives all might have a place.

Remedies to dissolve the concretions *in situ* were mainly advocated by quacks. Mineral waters, especially those of Vals and Vichy, possibly aided in effecting this. The acetates, malates, citrates, and carbonates of lithium, sodium, and potassium had a certain value in the diathesis, especially where occurring in mineral waters and drank at the springs. They should be drank till the urine remained faintly acid or neutral. Buffalo lithia water was among those which deserved a trial. Any sparkling water, especially if it contained sodium, was of value to make the urine mild and so lessen the production of colloid matter in the pelvis of the kidney. Every effort should be made to cure a pyelitis if present. Drugs such as copaiba and corn-silk might be tried, together with rest and quiet. The object, he concluded, was to restore a uniform and well-balanced functional action in all respects.

Hiccough, with Notes on Treatment.—Dr. W. F. PUTNAM, of Binghamton, read a paper thus entitled in which he reviewed the simpler and severer forms of this affection occurring in children and adults in both health and disease, its causes, and the various remedies. For simple cases any slight shock or diversion of the mind was enough; in severer cases chloroform, nitroglycerin, Fowler's solution with belladonna, electricity, or gelsemium might in many instances give relief. Other remedies were mentioned in great number.

Diphtheritic Paralysis; the Treatment of Diphtheria.—Dr. J. LEWIS SMITH, of New York, read portions of a paper thus entitled. In giving a history of the earlier recognitions of the possibility of a diphtheritic paralysis, he showed how slowly new ideas gained acceptance. The cause of diphtheritic paralysis and its mode of operation were unknown. It occurred oftener than was commonly supposed. A slight development manifested itself by a difficulty in swallowing and a nasal tone in the voice, and might escape observation or mention if attention was not directed to its discovery. Probably from one in five to

one in three of all cases developed paralysis in greater or lesser amount at some time in the attack. It came mostly during convalescence. The power of speech and that of swallowing were usually impaired first; distant parts suffered later. Cases were related where the paralysis had occurred during an epidemic without other appreciable symptoms. A fatal nephritis might in a similar way come a week or two after a mild attack supposed at the time to be merely a sore throat. It was like scarlet fever in this respect. Both motor and sensory nerves were affected, which was a point of value in diagnosis. The muscles whose nerves were affected atrophied as in other palsies. The order of frequency in which these disturbances appeared were as follows: 1. Loss of tendon reflexes, especially the patellar and plantar, and this was present from the inception of the disease, lasted longest, and occurred in from one third to one half of all cases under treatment. Some observers had noticed an increased reflex preceding its abolition. Cutaneous sensibility was often increased. 2. Paralysis of the velum palati, causing slow speech, snoring, difficult swallowing of fluids (so that the person had to throw the head back). It might extend to the epiglottis and upper larynx, so that bits of food entered. Both sensory and motor power were usually recovered. 3. Paralysis of the motor oculi or of the lower or upper limbs, but much scattered in different groups of muscles, and sometimes going suddenly from one part of the body to another. Rarely it affected the nerve supply of the bladder, rectum, abdominal muscles, or back. Even the facial nerve had been paralyzed. 4. Cardiac paralysis, which might come late when apparently the patient was safely through the disease. However, paralysis of the palate usually preceded it for several days. As to what caused this heart-paralysis, there had been much inquiry—whether the muscle substance was poisoned, or clots suddenly formed in the ventricles, or the center in the medulla oblongata was paralyzed, or the pneumogastric innervation became exhausted and suddenly ceased. He thought it could be proved that in most cases it was not due to a paralysis of the heart muscle with degeneration due to the diphtheritic virus, for in most cases it came suddenly and no changes could be found on autopsy. Clots, he believed, when found, were formed after death. For a cause acting suddenly and powerfully he looked mainly to a paralysis of the pneumogastric and a loss of cardiac innervation. For a general cause for all the paralyzes of diphtheria, he thought it not unreasonable that we should suppose, as Dr. A. Jacobi had suggested, that some poisonous leucomaine was liberated more or less suddenly when a certain point was reached in convalescence. Both central and peripheral lesions were found, mostly peripheral. They often ascended and might thus involve the nerve centers. But they were not structural lesions, or how could they jump about so from point to point?

In the way of treatment he advised a mild diet, including peptonized foods, general hygiene, especially ventilation, tonics, and rest. When paralysis appeared, strychnine was valuable both as a nerve and as a general tonic; massage was useful to keep paralyzed limbs in good condition till innervation returned, and, while testimony was contradictory as to the benefit to be derived from faradaic and induced currents, galvanism had certainly helped some cases.

Dr. C. A. LEALE, of New York, said that as chairman of the St. John's Guild and Sea-side Hospital he had had many cases of diphtheria under his care during the past summer. He felt bound to mention one particular in his experience with respect to treatment. He then showed a French gum-elastic catheter, No. 8, which he regularly introduced into the child's stomach by the nostril. He was then able to give it food in whatever amounts were thought best, and also its medicine, injecting either

by a syringe. This saved struggling and crying on the part of the child, made rectal feeding unnecessary, and was an available means when the child was unconscious. The results had been so exceedingly satisfactory that he felt it his duty to call the attention of the profession to this simple device in every way in his power.

The PRESIDENT remarked that, in view of all the disastrous results of diphtheria, fatty degenerations, paralyzes of muscles and vital organs, etc., it seemed astonishing to him how any one could imagine the disease to be essentially a local one, and try to wash it away from a supposed implantation in the throat. He then very graphically described the symptoms and subjective phenomena of a severe attack of diphtheria with which he had himself suffered, and which he had contracted from infection of a slight wound in his finger. A period of great malaise and depression had been succeeded by throat symptoms of the ordinary sort, and these by most curious nervous disturbances in sensation, motor paralyzes, and loss of speech and of ability to swallow solids. One remarkable thing he would like an explanation of. While still suffering from complete aphonia, he had found by chance that, by turning his head well around on to his left shoulder, the power was at once restored.

A Case of supposed Partial Twist of the Intestines.—

Dr. G. E. McDONALD, of Schenectady, read a paper with this title. Relief had been obtained by manipulation of the abdomen under chloroform several times repeated.

Does the Menstrual Flow originate in the Tubes?—

Dr. E. J. CHAPIN MINARD, of Brooklyn, gave in this paper a description of a case of inversion of the uterus where a dark, healthy flow, but without epithelia, had come from the tubes, which were under direct observation. The uterus had during the whole epoch been congested and bright red, but at no time moist enough to stain a piece of paper rubbed over its surface. The tubes were dilated at their openings. Judging from the anatomical make-up of the womb and from various clinical facts, she was convinced that this was the natural order of things, and that, while epithelium and *débris* of decidual origin were washed away, no blood escaped from the uterine wall. Sometimes when, in doing Battey's operation, the surgeon failed to remove the tubes close up to the uterus, menstruation had continued although no ovaries remained.

A report was read by Dr. C. A. LEALE, of New York, on the examination of some gall-stones, as they had been supposed to be. Dr. R. H. Sabin had placed them before the society the previous year. They had been passed to the amount of half a teacupful altogether, at various times, by a lady who suffered from severe attacks of biliary colic, accompanied by jaundice and fever. These small and corrugated bodies had proved to be raspberry-seeds. Apparently by lodging in some diverticulum of the intestine, they had given rise to the symptoms of a biliary colic. This colic had been relieved simply by bringing on a free movement of the bowels.

Railway Injuries.—Dr. C. W. BROWN, of Elmira, read a paper on this subject. (It will be published hereafter.)

Dr. T. H. MANLEY, of New York, disagreed entirely with Dr. Brown as to the latter's advocacy of immediate amputation of badly crushed parts. His own experience with "smashes" of limbs included several cases where children had been run over by horse-cars. Only hæmorrhage, to him, justified amputation, until reaction had set in. Till then it was a most dangerous procedure. Children bore amputation poorly. By waiting, the true extent of the injury would appear, and the vital forces would also rally from the effects of the general bodily jarring often incidental to the accident. He cited the case of a boy who had been run over, where, by waiting, amputation of a badly mangled and fractured arm had proved unnecessary.

In other cases a little time showed that more tissue was dead than had been at first discoverable. But he would always wait till reaction had set in.

Dr. E. M. MOORE, of Rochester, replied to these objections in detail. He thought we must distinguish between injuries to the limbs of boys and to those of grown men. The tissues had a greater recuperative power in the former case. Where he found the artery at the extremity of a crushed limb beating strongly, that decided him. If the vessels were intact, the limb could probably be saved. He cited an instance where an arm had been drawn in and its bones broken into fine pieces between the somewhat loosely set cogs of some machinery. The radial pulse, however, was firm, he did not amputate, and the limb recovered. But in a very great number of railway accidents there was no room for doubt; there were often no bodily injuries of account except the complete destruction which car-wheel and rail, or two buffers, had but too certainly achieved in hand, arm, or leg. Immediate amputation was then everything. He had once removed such a limb, in the days before ether was known. The patient had not seemed to be conscious of any pain connected with the operation, and his first words had been when the arm was off: "Doctor, you don't know how much better that feels."

He would say, in such cases, Give them heat, give them whisky and ether; but give them the knife. The terrible strain on the nervous system from the state of things in the injured limb, where the force had been immense, could not be too soon ended, nor the mental distress, which of itself might soon make the continuance of life impossible. And he had found the hot bichloride solution an anæsthetic as well as an antiseptic on the surface of the clean amputation wound which he substituted with all speed in such cases. Where there was uncertainty as to the extent or character of the injury, he placed the limb in hot water and waited perhaps several days.

(To be concluded.)

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from page 414.)

On Some Forms of Paralysis after Typhoid Fever.—The discussion on the subject of Dr. Ross's paper was continued as follows: Dr. M. ALLEN STARR, of New York, thought that, if neuritis were always due to the typhoidal poison, it ought to be much more common than it was. All the cases in his experience where general peripheral neuritis followed typhoid had been due to alcoholism, from liquor taken either during or before the disease. In regard to neuritis limited to one or two nerve trunks, might it not result from pressure of the limbs upon the bed, long continued, during a period when the patient lay in a comatose state? He had seen several such cases.

Dr. WILLIAM OSLER, of Philadelphia, reminded the meeting that there existed differences of opinion about the late paralysis of typhoid; some writers thought it due to a peripheral neuritis; others to a central inflammation, such as poliomyelitis. To him both clinical and experimental evidence indicated that either a myelitis or a neuritis might result from the typhoidal poison, as was the case in arsenic poisoning.

Dr. H. C. WOOD, of Philadelphia, remarked that those who had followed the course of lead palsy had had to deal with this same problem, finding either central or peripheral paralyzes, myelitis, or neuritis, and never being able to say why there was one or the other, in a given case.

Dr. F. DELAFIELD, of New York, thought that the lesions being discussed, though not very common, were, after all, such as might belong to the disease. The poisons of the severe infec-

tious diseases acted like mineral poisons in having a selective action on certain parts of the body, producing degenerative and sometimes inflammatory changes in limited areas. Just as arsenic and phosphorus were selective, so diphtheria was apt to affect the nerves markedly, and typhoid the spleen, and there were other such instances. He thought such a relation might now and then exist between typhoid and the nervous system.

Dr. Ross doubted that alcohol given only during the course of the disease, and in small quantities, ever caused neuritis. In the French hospitals no alcohol was given in typhoid, yet many cases of neuritis occurred. And as to the idea of neuritis being caused solely by pressure of the body on the bed, it left out of account the permanent cases of paralysis and those accompanied by atrophy which occurred in both typhoid and small-pox. Pressure might in some cases, though certainly not in all, have either caused or aided in causing a temporary paralysis.

Causal Therapeutics in the Infectious Diseases.—Dr. JAMES C. WILSON, of Philadelphia, gave in this paper the history of an experimental use of small doses of mercurials in typhoid fever and phthisis. It had occurred to him that, since antiseptics given by the mouth had not as yet reached the bacteria of these diseases, it was better to try to neutralize the ptomaines which they produced, and which directly caused the fever, and so make a step in the direction of casual therapeutics. Whether he had succeeded in altering the products themselves, or in sterilizing their soil or in checking their production, he could not say. Small doses subcutaneously of mercuric bichloride and of calomel (two grains) had been given in typhoid and phthisis with the effect of causing a steady fall of temperature. In the case of phthisis the cough and sweats had also been controlled, and the course of the disease checked. In the typhoid cases, which were all of a severe type and several of which relapsed, both the fastigium and the daily range of the fever had been modified and the temperature brought slowly back to normal, with a good recovery finally attained.

Dr. G. M. STERNBERG, of the army, opened the discussion of Dr. Wilson's paper by agreeing with him as to the value of efforts to find remedies for diseases directed against the material causes of disturbance present in the body. He was ready to accept as rational any therapeutical agent which seemed to accomplish this in a given case. In his own recent experience with yellow fever in Havana, observing the extreme acidity of the stomach always present at the beginning of the disease, he had been led by a similar course of reasoning to administer an alkali—the bicarbonate of sodium—together with the bichloride of mercury. Thirteen patients so treated had recovered. He felt that little was to be feared from yellow fever if this treatment could be given at the outset. Pneumonia he held in much greater awe.

In regard to enteric fever and the rise of temperature which usually attended constipation occurring in its course, he thought some observations of his threw light on the cause of this rise. He had found in the colon in healthy persons a bacterium producing a ptomaine which was, in comparatively small amounts, fever-producing. In typhoid and cholera it was probable that these bacilli spread, owing to peculiar conditions found outside their natural habitat, from the large intestine into the small intestine, and even the stomach. Constipation favored the retention of their fever-producing product.

Dr. J. T. DANA, of Portland, Me., gave as one of the theses of curative medicine the following: Infection meant bacteria, and that the production of poisons. Our hope must be to destroy these germs, if possible, without taking the patient's life. Failing in this, we should try to make the tissues resistant to the germ or the ptomaine, or to destroy or modify its soil.

Dr. G. L. PEABODY, of New York, thought that hope lay in

the direction indicated by Dr. Wilson; but he wanted to confess that what he had told the society the year before as to the success of an antiseptic drug needed to be added to. He had then reported the successful use of naphthaline in aborting typhoid fever in three cases. Since then he had failed to produce this result, and had met with a large mortality where he had given the drug for that purpose. The mortality had been quite too large. He now gave the drug in a form to avoid stomach absorption, in keratin-coated and salol-coated pills, but had not yet got results worth speaking of. The method of coating pills with salol was both easy and cheap.

Dr. JACOB, of New York, speaking in regard to bichloride of mercury in diphtheria, was sure it was the best thing we had. He used it in doses just sufficient to neutralize the floating poison. He had never seen typhoid aborted, but he had seen great improvement in the stools. In phthisis it seemed to check the diarrhœa. He considered it worth while to go on trying.

Dr. W. W. JOHNSTON, of Washington, had never seen a downward course in typhoid increased by naphthaline; and there were downward cases. He had not found, that is, that in such death occurred any sooner from its use.

Dr. WILSON closed by repeating that he had only related a clinical experiment in which he had aimed at a direct treatment better than either the symptomatic or expectant plans. We did not know the mode of action of quinine in malarial disease or of bichloride in syphilis. He had been led to use the drug in typhoid by observing the success which attended its use subcutaneously in syphilis. It had been used in this way years ago in Italy for syphilis and diphtheria, but had been abandoned on account of the abscesses which resulted. These latter we now knew how to avoid by asepsis. He had simply found that his cases, and they were very severe ones, as given in his paper, did much better than he had ever seen cases equally bad do otherwise.

Fatty Heart.—Dr. FREDERICK FORCHHEIMER, of Cincinnati, in his paper on this subject, gave the results of the examination of 122 cases. He had concluded that the cause of fat-accumulation was the same here as in other parts of the body, and that it might occur at any time of life. Occupation had considerable bearing. A muscular man and one of active habits up to forty years of age, who then became inactive and comparatively idle, was especially liable to obesity. Men suffered more than women, because women were less likely to make such a change in their habits at that time of life. He had found that the use of alcoholic drinks, and particularly of beer, did much to cause the condition. All causes of heart-strain tended to bring it about, such as the use of tobacco, coffee, tea, violent exercises, or a condition of general neurasthenia—though whether the latter was more an effect or a cause of the change in the heart he had been unable to decide. Also prolonged troubles in business, or of an emotional sort, might lead to a sudden development of fatty heart.

It was necessary to divide the condition into the two forms in which it was met with: first, a surrounding of the heart by masses of fat, with accumulations within or upon the pericardium and between the various septa. This could sometimes be made out during life by an increased area of dullness and a less distinct sound. It was difficult to do so, owing to the amount of subcutaneous fat over the chest usually present also; and in the main we were obliged to depend on the revelations of the post-mortem for our ideas on this matter. Even then, autopsies being still the exception in private practice, a great many instances must necessarily be unknown. However, fat around the heart was not a matter of particular importance.

But in a second class of cases, when the myocardium itself was invaded by a diffused fatty infiltration of oily globules, and

its function as a muscle was checked, then the muscular fibers became atrophied and distorted, and sometimes degenerated; but that might in any such case be due to the general cause which had led to fatty deposits as well. At any rate, the myocardium became soft, flabby, and easily torn. The results of that were that sometimes hypertrophy, myocarditis, or rupture, but rarely any valvular lesions, supervened; also any of the results of an impaired circulation and venous stasis or obstruction, showing, under familiar forms, in the lungs, liver, stomach, or kidney.

The symptom in the first class of cases was shortness of breath on exertion or excitement. Such patients suffered by reason of the increased amount of blood which often preceded or accompanied fat accumulation and crowded into the right heart and pulmonary artery upon exertion. They also suffered from the actual displacement and compression of the lung by the masses of fat about the heart. This condition came on slowly.

In the second class of cases there was a history of sudden accession of a heart trouble, of dyspnea at night and following meals, of inability to go to sleep after becoming quiet in bed, or of angina or cardiac asthma. Sometimes apoplectic symptoms appeared, due to an accompanying fatty degeneration of the blood-vessels in the brain and elsewhere. A dilated heart would give the same objective signs as a fatty heart; we had to judge from all the symptoms. Percussion was not satisfactory in a fat person. Auscultatory percussion did rather better. The rhythm and sounds were changed in character and deserved careful note. A bruit was sometimes present, though it was not dependent on a degeneration of the papillary muscles nor on a valvular lesion. It might, he thought, result from imperfect contraction, or from anæmia in certain cases, or, again, it might be of nervous origin. After all, the guiding symptoms were the disturbances of the heart-action taken along with the general obesity. If the person was not fat, no diagnosis was possible, in life, between fatty heart and several other conditions which gave the same manifestations.

The speaker concluded with remarking that he used Oertel's method of treatment. Some might think it was dangerous, but, so far as he knew, harm had never been shown to have resulted from Oertel's plan, unless there were obstructions to the circulation in the heart, lungs, or other parts of the body.

Dr. A. JACOBI, of New York, remarked that fatty heart had been spoken of in connection with general obesity only, but that account must be taken of other cases than these, and that they would help us to a better understanding of the condition, for they occurred without much or any obesity. Fatty degeneration of the heart substance must be taken as one of the results of malnutrition. Such malnutrition might result from the excessive ingestion of carbohydrates and fats with a consequent exhaustion of the oxidizing power; it might result from alcohol, or again be of congenital origin. He related the history of a case where a lady died at thirty-two years, apparently of pernicious anæmia. The autopsy showed an almost complete fatty degeneration of the heart without enlargement. All the arteries, from the aorta down, were congenitally small in caliber. This undeveloped condition of the arteries was not uncommon. It caused a deficient nutrition of the whole body; while, the heart's coronary supply being itself curtailed, that muscle, like any other, became feeble and finally underwent a fatty degeneration when there was a lack of blood to nourish it, though in certain cases the heart either became or remained from childhood up unnaturally small.

Dr. F. P. KINNICUT, of New York, remarked that von Esmarch had recently seen great and astonishing improvement obtained in cases of fatty heart by the Oertel plan of treatment.

The rules of Oertel as to the contra-indications to this method, and especially as to conditions where a fine graduation of exercises was necessary, had been carefully observed.

Dr. F. C. SHATTUCK, of Boston, remarked that fatty heart was more common among Germans, both here and abroad, than among Americans. In the discussion at the Wiesbaden conference he had noticed more unfavorable opinions regarding the Oertel plan of treatment than authorities seemed to take into account; at least it was certain much damage had resulted from its use, though this, in his opinion, had been from its misapplication in improper cases, where the diagnosis had been too difficult.

Dr. J. TYSON, of Philadelphia, said that, in regard to the determination of the presence of fatty degeneration, it was his opinion that true fatty degeneration of the heart was not apt to be associated with obesity as fatty infiltration was, but was likely to follow some acute disease, or chronic endocarditis, or nephritis. He believed that cases of obesity and fatty infiltration could be safely treated by Oertel's method.

Dr. H. C. WOOD, of Philadelphia, believed the use of Oertel's method needed great caution in severe cases. Sudden deaths had occurred a number of times. The theory of the method was to rejuvenate the heart muscle by increased work, as one would a biceps that was undeveloped by neglect of exercise. But the heart never rested. Its work in every instance was and had been without pause. If it was once partly changed to fat, might not climbing of mountains and long walks precipitate heart failure, if undertaken too enthusiastically? Consequently the speaker urged a very careful selection of cases with full warnings and directions to the patient, and the constant supervision of a competent physician. Even then there was danger, owing to the chance that the diagnosis of the heart condition had not been correct.

Dr. KINNICUT here explained that Oertel himself was very far from merely prescribing free mountain climbing. On the contrary, he determined and graduated the distances to be walked very carefully, even to the distance in feet. His study of the individual patient was minute. He prescribed the diet and the times of rest; in brief, he took every element of the case into account.

Dr. WOOD rejoined that he knew the Oertel method also called for a withdrawal of fluids from the diet, stopping the use of alcohol and the giving of a light diet free from fats, but that the peculiar feature of the method was the exercise, and that that was apt to be overdone and carelessly employed.

Dr. FORCHHEIMER again stated that Oertel sent no patient with a weak heart to the top of a mountain 3,000 feet high. He graduated the amount of exercise most carefully, and particularly he made it proportional to the returning strength of the patient. His published experiments were those made on himself, and it was himself he had cured of the condition in the first instance. The principal thing Oertel insisted on was to have the patient abstain from fluids, to give him a light mixed diet with an absolute reduction of the total daily amount, and to allow scarcely any fatty elements in the food. In this way the fat in the heart substance was actually made to disappear, and the muscular fibers gradually grew from increased use and took the place of the fat.

The only objection was that certain observers had reported that harm had come from the use of the method. These charges were not further specified, and we had no means of knowing that these cases had been of the class amenable to Oertel's method, or that his ideas had been accurately carried out in regard to either diet or a graduation of exercise.

The Diagnostic Significance of the Mitral Systolic Murmur.—Dr. FRANK DONALDSON, of Baltimore, presented in this paper the results of elaborate research among the records of

physiologists and diagnosticians as to the causes of this murmur, together with his own independent conclusions as to the manner of its production. He remarked that no other abnormal cardiac sign had more definite characteristics. Its development was very slow.

In the normal state the blood in the lesser circulation rushed on through the distribution of the pulmonary arteries into the elastic pulmonary veins, then directly onward through the auricle into the ventricle, continuing its flow until the ventricle as well as the auricle was nearly full, when suddenly the auricle contracted on its contents and completed the distension of the ventricle previous to the systole. Ludwig and Hess had shown that the mechanism of the closure of the left auriculo-ventricular orifice did not reside in the valve alone; the surrounding muscles of the ventricle had an active share, not merely in floating up the valve-curtains, but in reducing the size of the aperture which these valves had to close. As the systole began, the muscles surrounding the ostium contracted, and presently, instead of the round gaping orifice at the diastole, the valves had to close over the compressed papillary muscles, keeping the curtains tight during the contraction of the ventricle. The whole action of the heart was screw-like, six or seven distinct layers of muscular fibers crossing each other in a rotary arrangement. The base muscles had their share of closure; the valves promptly completed it. When the muscles of the base were enfeebled the valve-curtains were insufficient to close the orifice. During the long pause in health there was no tension of valves to cause sounds and there was no lessening of diameters; but if from any cause this should occur, then we had sonorous jets of vibration which must produce murmurs.

The mitral valves and the auriculo-ventricular orifice were especially liable to inflammation from acute or subacute rheumatism and other causes, such as scarlet fever or measles. These inflammations left behind formations of connective tissue which narrowed the orifice itself in the annular form or by diaphragmatic partitions with button-hole orifices. Or the leaflets adhered together and produced funnel-shaped constrictions. In some cases the valves completely lost their natural formation. These new conditions were most favorable to the production of murmurs which were due to the oscillation in the blood itself. The current of the blood passed through the small opening into a wider cavity and was divided up into a number of jets, forming fluid veins. The rapidity and force of the current must cause a variation in the intensity of the sound corresponding to its own variation in strength of propulsion. It was a mistake to suppose that the presystolic murmur was always the same. Instead of a prolonged cardiac bruit, it might be very short—so short, indeed, as to be with difficulty separable from the natural first sound. Occasionally it appeared like a tone or accentuation of the first sound, and the first sound thus became so sharp and clear that it might easily be mistaken for the second sound, which became inaudible at the apex, and, unless careful attention were paid to rhythm, there was danger that the combined sounds might be mistaken for a normal sound. In brief, the presystolic bruit varied much in length, loudness, and quality.

The name of post-diastolic was given very inappropriately to the murmur heard immediately following the closure of the sigmoid valves. This sound, though rough, was not blubbery and vibrating. It was generally indicative of pronounced stenosis. It should be called diastolic. These two, the presystolic and post-diastolic, might be present independently of each other, and, when found in the same patient, might run into each other, or they might be separated by an appreciable interval.

Although much had been written about the presystolic murmur, it was not infrequently overlooked even now, and often mistaken for the mitral systolic murmur. It was known

now, the reader continued, that it was a frequent occurrence to find presystolic murmurs, especially among women and children. Flint had observed it in 16 out of 39 cases of mitral disease. Its great prognostic significance alone justified the attention that had been given it. He would present a brief study of the factors entering into the production of this interesting murmur when of organic origin.

There must be two factors in the production of "fluid veins," whether obstructive or regurgitant: a lesion in the heart, and a change in the propelling force, together with the other well-known influences modifying blood-pressure. For the generation of sonorous fluid veins we must have the passage of a jet of blood through a narrow constriction into a wider cavity. It was known that mitral stenosis was the lesion in a very large majority of cases where a presystolic murmur was heard; many authorities thought it was always so. However, the lesion was frequently found at post-mortems where there had been no presystolic murmurs heard during life. In other cases, where the mitral orifices were not altered in size, other obstructive and narrowing conditions were found inside the ventricle, such as shortened chordæ tendinæ or thickenings and rugosities about the leaflets of the valves or in the walls of the ventricle, accounting for the production of the characteristic prolonged blubbery, presystolic murmur.

Whenever and wherever we found physical conditions to produce fluid veins with vibratory phenomena there might be the same sound, though this was rarely met with; still, according to Dr. Guitéras, it was more frequently seen than Flint had supposed.

The speaker proposed to make an inquiry to determine from what sources the necessary force of the blood-current was derived. Dr. Gairdner taught that it was produced by the systole of the left auricle, and he accordingly named the adventitious sound the auriculo-ventricular murmur. This could not possibly apply to the sound which existed before the contraction of the auricle, which in health occupied one fifth of a second and immediately preceded the systole of the ventricle.

The feeble force of the auricle in health had been shown by Chauveau, who, by prolonged irritation, had exhausted its contractility and found that the ventricle continued to act effectively and kept up the circulation. Ludwig had confirmed this result by introducing a tube through the auricle. In fact, the auricle might be regarded as the dilated termination of the pulmonary veins acting as a reservoir to supply the ventricle and to regulate the blood-pressure in it.

In the author's opinion, we might ascribe the production of the presystolic murmur to beginning obstruction of the mitral orifice and to the force of the left ventricle. Temporary compensation was promptly established in the force of the circulation. It seemed that there was a reserve force, as in the voluntary muscles, which was called forth in the emergency. We also admitted that, as the result of obstruction at the mitral orifice impeding the influx of blood into the left ventricle during the diastole, the left auricle, having additional work to perform, became first dilated and then hypertrophied. Indeed, pericarditis in rare instances revealed abnormal bulging over the auricle, and frequently the pulsation of the auricle was perceptible about the fourth rib. The walls of the left auricle, which were normally about a line and a half in thickness, might be increased to as much as a quarter of an inch, with a proportionate increase of strength. It might be that the prolongation of the bruit was due to this hypertrophy, but it was almost incredible when we remembered that it was the longest as well as the most irregular and vibrating of all the cardiac murmurs. It was questionable whether the force of such an hypertrophied auricle was sufficient by itself to overcome the resistance

caused by advanced mitral constriction, and to give us the acoustic characteristics of the presystolic murmur.

He felt justified in concluding that the systole of the left auricle was a factor of greater or less force in the production of this mitral direct murmur, but that it was not the only one, and the others might produce it independently of the auricular systole. He then described a number of experiments showing that, while suction might exist in the ventricle for a brief period at the end of the systole, this did not extend to the auricle; and that the heart was of no effect as a suction-pump so far as the venous system was concerned.

When the aspiration of the thorax had been eliminated, the heart would not receive blood unless supplied to it under a decided, even if small, positive pressure. The reader then showed that such a pressure did come around from the right ventricle, through the lungs, and compensation was thus made, in the lesser degrees of mitral stenosis, by hypertrophy of the right ventricle. A relatively high pressure had been proved to exist in the pulmonary veins. The walls of the veins being thinner than those of the artery, the motion of the chest increased, by the reaction of the elastic lungs, the pressure in the veins, more than in the strong-walled arteries.

As a relief to the lungs, the right ventricle became hypertrophied as stenosis increased, in some cases to such an extent that the enormously thickened walls completely covered over the left ventricle, prevented our hearing the second sound at the apex, and nearly obscured the impulse. If this hypertrophy was very marked, might it not be the propelling force producing the long sound commencing immediately after the systole, and occupying the whole of the diastole? If the force was feeble it might only produce the post-diastolic murmur and cause the deficiency in the middle of the distance between the second and first sounds. But as muscular power left an excessively enfeebled patient it utterly disappeared. Indeed, it was very remarkable how the murmur sometimes disappeared for short times or permanently, the condition of the valve being unaltered. Or, the force being feeble, if the patient was in the recumbent posture and the heart quiet, the murmur was inaudible; but on his changing his position or rising, it might be heard again, while the exertion caused a more forcible heart action. Active exercise increased the intensity of the murmur in a marked degree.

To sum up, it appeared that the evidence of the cardiograph was in favor of the view that two totally distinct murmurs might be caused by mitral stenosis and constrictions: 1. The auricular systolic bruit, which might either run up to the first sound, or be separated from it by a short interval. 2. The diastolic bruit due to the venous flow through the narrow and roughened orifice. In rare cases it might be blowing in quality and separated from the succeeding systole by a long pause. The two might also be merged together into a compound murmur, somewhat rough at its commencement but much intensified in loudness and harshness toward its close.

To diagnose mitral stenosis we had other signs besides the presystolic murmur. The thrill at the apex was a sign of great importance and was perceptible when the murmur was heard. The reduplication of the second sound was present in at least one third of all cases of mitral stenosis. There was also the altered sharp first sound, which resembled the second sound. The accentuation of the pulmonary second sound was very important, as it often enabled us to diagnose the extent of the lesion. Percussion showed increased dullness over the right cardiac area for reasons given before. There was feebleness of apex-beat, and in advanced stages of a mitral stenosis the pulse was smaller than natural. Cardiographic tracings showed rough, irregular waves starting immediately after the second sound

which might take up the whole of the diastole. They resulted from the irregular vibrations of pressure corresponding to these various factors in the production of a presystolic murmur.

(To be concluded.)

Book Notices.

A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis, and Treatment. By ROBERT W. TAYLOR, A. M., M. D., Surgeon to Charity Hospital, New York, and to the Department of Venereal and Skin Diseases of the New York Hospital, etc. Illustrated with One hundred and ninety-two Figures . . . on Fifty-eight beautifully colored Plates, also many large and carefully executed Engravings through the Text. Part i and Part ii—Venereal Diseases. Philadelphia: Lea Brothers & Co., 1888. Folio. Pp. 115, 117 to 136, inclusive.

SOME months ago, having had the opportunity of examining impressions of many of the plates that had been prepared for this great work, we mentioned them in terms of commendation. We are glad to add now that the appearance presented by the two finished parts that have been issued amply confirms us in our opinion. The colored drawings seem admirably calculated to answer the purpose stated in the author's "Prefatory Note"—that of furnishing the practitioner with a diagnostic guide "by the delineation of successive typical stages of those diseases which imitate each other at some period of their course."

Great as the value of this atlas is as a pictorial aid in a difficult branch, it is immeasurably enhanced by the text. Prominent among Dr. Taylor's many points of excellence as a writer is his thorough recognition of the fact that, when he is writing for general practitioners, theoretical problems are to be made subordinate to practical matters. In the work now under consideration he has succeeded in presenting simple and comprehensive views of cutaneous and venereal diseases.

In that portion of the work which is devoted to gonorrhœa, the author gives all due importance to the gonococcus doctrine of the ætiology of the disease, assuming, as becomes a teacher of such eminence, a conservative attitude that will be appreciated by all judicious readers. We are particularly pleased to find that the subject of gonorrhœa in women is treated of more fully than in most works on venereal diseases, its exposition being especially full in the matter of the clinical history. Phimosis, paraphimosis, and herpes progenitalis having been given due consideration, with an ample portrayal of their ætiology and clinical history, the author passes on to the subject of chancre. Of this affection he gives the clearest and most satisfactory exposition with which we are acquainted, particularly in his statement of the argument against its specific nature, the purport of which could not be more plainly put than in his declaration that, "while the chancreoid may be—and very commonly is—derived from a previous chancreoid, a chancreoid bubo, or a chancreoid lymphangitis, it also may originate in the pus derived from irritated lesions of syphilis and from irritated simple lesions in syphilitic subjects, and in simple pus, particularly when originating in active or intensely irritated lesions."

The accounts of those local affections take up 104 pages of the text, and then comes the subject of syphilis. To say that Dr. Taylor treats of it on the basis of a long and exceedingly wide course of personal observation, associated with extensive and appreciative reading, is to say that he presents it with all the advantages that can be had by an author, and with the clear-

ness and simplicity that are to be found conspicuous in all his writings. It is to be expected that those subsequent parts of the atlas that are to treat of skin diseases will show equal merit, and we are convinced that the work as a whole will prove a most effective addition to the practical physician's resources.

BOOKS AND PAMPHLETS RECEIVED.

A System of Gynecology. By American Authors. Edited by Matthew D. Mann, M. D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo, N. Y. Vol. II. Illustrated with Four Colored Plates and Three Hundred and Sixty-one Engravings on Wood. Philadelphia: Lea Brothers & Co., 1888. Pp. xiii-17 to 1180.

A Compend of the Diseases of the Eye, including Refraction and Surgical Operations. By L. Webster Fox, M. D., Ophthalmic Surgeon to the Germantown Hospital, etc., and George M. Gould, M. D. Second Edition, revised and enlarged, with Seventy-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xiii-9 to 164. [Price, \$1.]

The Treatment of Empyema. The Process of Repair. A Method of Subcutaneous Drainage and Irrigation. With Illustrative Cases. By G. J. Robertson, M. B., C. M., Surgeon to the Oldham Infirmary. [Reprinted from the "Medical Chronicle."]

Sixth Annual Announcement of the Northwestern Ohio Medical College, Toledo, Ohio. Session of 1888-'89.

The Treatment of Epithelioma with Mild Caustics. By Daniel Lewis, M. D., Surgeon to the New York Skin and Cancer Hospital. (Read before the New York Dermatological Society.)

Is Belief in Spiritualism ever Evidence of Insanity *per se*? By Matthew D. Field, M. D., etc. [Reprinted from the "Journal of Nervous and Mental Disease."]

Hand-book of Historical and Geographical Phthisiology. With Special Reference to the Distribution of Consumption in the United States. Compiled and arranged by George A. Evans, M. D., Member of the Medical Society of the County of Kings, New York, etc. New York: D. Appleton & Co., 1888. Pp. 8-9 to 295. [Price, \$2.]

Hygiene of the Nursery. By Louis Starr, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, etc. With Twenty-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii-17 to 212. [Price, \$1.50.]

A Review of the Surgery of the Knee Joint for the Last Fifty Years. By James S. Green, M. D. [Reprinted from the "Transactions of the Medical Society of New Jersey."]

Fifteenth Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the Year ending June 30, 1887.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland at its Nineteenth Annual Session, held at Baltimore, April, 1888.

Transactions of the American Association of Obstetricians and Gynecologists, at the First Annual Meeting, held in Washington, September 18, 19, and 20, 1888. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Displacements of the Uterus, together with Formula for Official Dilute Hydrobromic Acid of the United States Pharmacopœia. By De Witt Clinton Wade, M. D., Holly, Michigan. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Reports on the Progress of Medicine.

PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

Preliminary Communication on the Coagulation of the Blood (Presented by E. A. Schäffer).—W. D. Halliburton ("Proceed. of the Royal Soc.," No. 269, 1888) undertook his experiments to determine the na-

ture of the ferment which, after Hammersten's theory, converts a proteid substance into fibrin, fibrinogen existing in solution in the plasma. The author adduces some of the current theories, among which is that of Alexander Schmidt, who taught that fibrin was formed by the union of two fibrinogenators, one of which was the fibrinogen of Hammersten, and the other what he called fibrinoplastic substance, or paraglobulin, the union of both being effected under the influence of a third factor, the fibrin ferment. But Hammersten showed that paraglobulin, or serum globulin, was not necessary for the formation of fibrin. Halliburton disagrees decidedly with Wooldridge as regards his theory and methods of investigation, as well as the results obtained. Wooldridge considers the coagulation of the blood as a phenomenon essentially similar to crystallization, and thinks that in the plasma there are three constituents concerned in coagulation, *A*, *B*, and *C* fibrinogen. *A* and *B* fibrinogen are composed of lecithin and proteid, and fibrin results from the transference of the lecithin from *A* to *B*. *C* is what has been called fibrinogen. *A* fibrinogen Dr. Wooldridge defines as a substance which may be precipitated by cooling "peptone plasma," and on the removal of this substance coagulation occurs with great difficulty. The coagulation of blood-plasma when in contact with lecithin, the author states, does not point to any specific action of this agent, for blood coagulates in the presence of any foreign matter; and Nauck has shown that small quantities of glycin, uric acid, etc., as well as lecithin, hasten coagulation. He further remarks that the inconsistency of Wooldridge's supposition that the fibrinogen *A* gives up its lecithin to *B* to form fibrin is seen on following out his thesis. Another untenable point of Wooldridge's the author finds in the precipitate produced by cooling peptone plasma. After the definition of *A* fibrinogen referred to above the occurrence of this precipitate must be regarded by Wooldridge as one of the most important facts upon which his theory is founded. But the author professes to have ruined Wooldridge's theory by stating that this precipitate could not be obtained on cooling to 0° C. (32° F.) either pure plasma from the veins of horses, salted plasma, hydrocele fluid, or pericardial fluid; that, therefore, it occurs in peptone plasma alone, and that the profound difference between peptone plasma and normal blood was shown by Wooldridge himself. And the coagulation which takes place on cooling the peptone plasma Halliburton attributes, with Nauck, to the action of the broken-down leucocytes under the influence of ice crystals. The last point of disagreement is as regards the intravascular coagulation. The author holds with Krüger that in Wooldridge's case the coagulation was due necessarily to the presence of leucocytes, not to the specific fibrinogen of Wooldridge, and finally concludes that the properties ascribed by Wooldridge to the fibrinogens cause the latter to be classed in the group of proteids, which, according to the author's theory, share in the formation of fibrin. The results of the author's experiments are formulated as follows:

1. Lymph-cells yield as one of the products of their disintegration a globulin which may be called cell globulin, and has the properties ascribed to the fibrin ferment.
2. Fibrin ferment as extracted from the dried alcohol precipitate of blood serum is found on concentration to be a globulin with the properties of cell globulin.
3. The fibrin ferment as extracted by saline solutions from "washed blood-clots" is a globulin which is also identical with cell globulin.
4. Serum globulin as prepared from hydrocele fluid has no fibrinoplastic properties. It may better be termed plasma globulin.
5. Serum globulin as prepared from serum has marked fibrinoplastic properties. This is because it consists of plasma globulin and cell globulin, derived from the disintegration of the white blood-corpuscles which are in origin lymph-cells.
6. The cause of the coagulation is primarily the disintegration of the leucocytes; they liberate cell globulin, which acts as a ferment converting fibrinogen into fibrin. It does not apparently become a constituent part of the fibrin ferment.

The Diagnostic Value of Hydrochloric Acid in the Gastric Juice.—

M. Dastre ("Revue des sci. méd.," No. 63, 1888) reports L. Bordon's article ("Acad. dei fisiol. di Siena," 1888) as saying that the author investigated the reactions of hydrochloric and lactic acids in a number of pathological cases; all experiments were performed under analogous conditions. Faucher's sound was used. The conclusions were: The reaction of hydrochloric acid may be absent in different affections, febrile maladies, mucous dyspepsia, hysteria, chlorosis, and tuberculosis. In

case of cancer of the stomach, hydrochloric acid may present no changes at all, in the first stages at least. The hyperhydrochloric secretion of gastric ulcer may persist until the last moments of the malady. The fact of the absence of hydrochloric reaction is of value in the diagnosis between a carcinomatous tumor and a tumor produced by the cicatrix of an ulcer, in cases where at the same time grave symptoms of general inanition are observed.

The Relation between Pancreatic Action on the Albuminoids and the Quantity of Indican in the Urine.—M. Dastre ("Revue des sci. méd.," No. 63, 1888) reports the article of G. Pisenti ("Archivio per le scienze mediche," vol. xii, No. 5, 1887), which is formulated as follows: It is known that indican which colors the urine is formed with the introduction of indol into or with its formation in the organism, and that the putrefaction of organic materials in the intestine is also a source of indol; the latter is reabsorbed in the last portions of the digestive tract. On the other hand, indol is, according to Salkowski, in a certain relation with the pancreatic peptones, the putrefaction of which produces relatively a greater proportion than other albuminoids. The author has been led to think, from this chain of reasoning, that the physiological experiments and pathological affections which would reduce and enfeeble the pancreatic reaction should diminish at the same time the amount of indican in the urine. Such results may be expected if a pancreatic fistula is established, or when Wirsung's duct is abolished. Pisenti determines first the average quantity of indican in the urine, in correspondence to a given regimen; then he finds whether this quantity is diminished in a dog which has been submitted to a pancreatic operation. He found that a dog which weighed seven kilos furnished from eleven to nineteen milligrammes of indican, as determined by Salkowski's colorimeter. After the operation this quantity was lowered to 4.84 milligrammes. This result confirms the author's view *a priori*. It is added that the diminution is preceded by a temporary augmentation consecutive upon the operation (partial peritonitis?); the re-establishment of the pancreatic flow augments again the amount of indican in the urine.

On a New Point in the Physiology of Respiration.—Lucien Denian ("Union médicale," No. 79, 1888) makes a general review of the current theories on the expulsion of carbon dioxide from the lungs, which may be formulated as follows: The obscure point of the mechanism of exhalation of carbon dioxide was interpreted by Paul Bert on the hypothesis that the fact is due to a chemical phenomenon, or phenomenon of dissociation. Paul Bert's theory was accepted by Robin and Verdel; they even invented an imaginary pneumatic acid, which was supposed to replace the carbon dioxide in its hypothetical combinations in the blood serum. The pneumatic-acid theory, having found no real ground, was soon abandoned. To-day the function of pneumatic acid is attributed to oxyhæmoglobin. Recently Dupont advanced the theory of elective action, or of the physiological property of the pulmonary epithelial cell to select, separate, and eliminate as the object of its secretion the molecule of carbon dioxide, as other epithelial cells select, separate, and eliminate the molecule of glycogen, albumin, water, etc. The more recent theory of von Fleischl seems to the author to give the natural and direct solution of the problem. Von Fleischl attributes the expulsion of carbon dioxide, its rapid dialysis through the vasculo-alveolar epithelium, to the brisk liberation of this acid from the solution in which it is contained, caused by the stroke of the heart-beat communicated to the lungs. Von Fleischl sees in the fact the simple physical phenomenon which is identical with that observed on exposing to suction a liquid holding a gas in solution. The external suction causes a gradual liberation of the gas in solution, but a simple percussion communicated to the vase containing this solution under the same suction suffices to produce an immediate liberation of the whole dissolved gas. The quantity of gas so discharged is a hundred times greater for the same suction and the same time. The interpretation by the German physiologist of the mechanism by which carbon dioxide is set free from the blood serum, Denian further states, is of the highest importance in understanding the rapid discharge of this gas in the atmosphere of the pulmonary vessels. According to von Fleischl's theory, the rapid separation of the serum and carbon dioxide is caused by the stroke of the heart communicated at each systole to the ramifications of the pulmo-

nary veins holding the gaseous solution. A diminished pressure results after the first stroke, and the phenomenon is completed by the alternate dilatations and contractions of the heart, and also by the play of the thoracic wall. The importance of the view advanced is evident, the author alleges, though this physiological fact may be due to a more complex mechanism. If it is accepted that the heart shares in the expulsion of the carbon dioxide, it is further said, the enfeeblement of the heart muscle must now be of double importance in the genesis of cyanosis. The author finally remarks that comparative anatomy and physiology furnish some arguments to sustain the idea.

On the Action of some Antiseptics and of Heat on the Bacillus of Tuberculosis.—A. Versin ("Jour. de méd., chir. et pharm.," No. 16, 1888) reports from the "Annales de l'institut Pasteur," No. 2, 1888, the results of experiments made to kill the bacillus in the sputum of tuberculous patients. It was found that the bacillus was killed after thirty minutes in a 5-per-cent. solution of phenic acid, and lived only five minutes in a 1-per-cent. solution of the same acid. Its life lasts only five minutes in absolute alcohol and iodoform 1 per cent. It is killed after ten minutes under the influence of ether, or when in a sublimate solution of 1 per cent.; it can live three hours in a 3-per-cent. solution of thymol, and six hours in a 2.5-per-cent. solution of salicylic acid; it resists for twelve hours in a 4-per-cent. solution of boric acid and in water saturated with creasote. It resists a temperature of 60° C. (140° F.), and succumbs when exposed to a temperature of 70° C. (158° F.) for ten minutes.

On the Influence of Antipyretic Substances on the Amount of Glycogen in Muscles.—Lépine and Porteret ("Gaz. hebdom. de méd. et de chir.," No. 34, 1888), after having explained the methods they have used and the precautions they have taken as regards the weight and conditions of the animals experimented on, conclude that animals poisoned by antipyretics have from 28 to 30 per cent. of muscular glycogen; this is an excess as compared with the normal amount of muscular glycogen. They remark that the fact must be of importance in connection with the theory of antipyretic treatment.

On the Accidents produced by Carbon Oxide ("Jour. de méd., de chir. et de pharm.," No. 15, 1888).—Gréhan ("Jour. de pharm. et de chir.") has measured the respiratory capacity of normal and partially poisoned blood. He found that blood began to absorb carbon oxide in an atmosphere of $\frac{1}{1000}$ of this gas; in an atmosphere containing $\frac{1}{100}$, half of the quantity of hæmoglobin was combined with the toxic gas. He recently repeated his experiments by comparing the gases extracted from normal arterial blood with those extracted from a dog that had respired for an hour in an atmosphere containing $\frac{1}{100}$ of carbon oxide. The following table shows the analysis of 100 c. c. of blood:

	Normal blood.	Poisoned blood.
Carbon dioxide	47	50
Oxygen	27	14.2
Nitrogen	1.5	1.5

The second specimen of blood contained 12.8 c. c. of oxygen less than the former. The poisoned blood was treated with acetic acid at a temperature of 100 C.° (212 F.°), and 14.4 c. c. of carbon oxide were extracted, which were combined with the hæmoglobin. The author made researches on the toxic dose of carbon oxide for different animals, and for birds it was found to be $\frac{1}{500}$. He makes the practical application of the latter result in apartments where an imperfect method of warming exists. The death of a bird removed recently to a room insufficiently ventilated proves the atmosphere dangerous for man.

On the Action of Antipyretics and Antipyrine; Calorimetric Researches.—E. Destrée ("Jour. de méd., de chir. et de pharm.," No. 14, 1888) investigates experimentally the question as to whether the action of antipyretics is to diminish the production or increase the radiation of heat. According to Maragliano, Anserow, and Bettelheim, the action of antipyrine results in a dilatation of the cutaneous vessels, and in a consequently exaggerated loss of heat. The author used for his researches d'Arsonval's apparatus. A preliminary experiment was made on a normal rabbit, which weighed 1,900 grammes, and the aver-

age number of calories discharged during five hours was found to be 26.2. Ten centigrammes of antipyrine were then administered to the same animal, and the number of calories discharged for the same time was only 23, and, though the calories discharged decreased with the increase of the administered dose of antipyrine, a one-gramme dose reduced the number of calories to 22.35. With higher doses more demonstrative results were obtained, though, the author remarks, in some cases the animals get used to the drug, and do not give the expected results. It is difficult to answer the question, the author alleges, as to whether the diminution of production of heat is due to the diminished peripheral circulation or to the enfeebled process of elementary oxidations. Admitting Bettelheim's, Maragliano's, and Anserow's statements of the dilatation of the cutaneous vessels, the diminution of the heat production can then only be explained by the supposition of a diminished process of oxidation.

The Physiology of Iron.—G. Schlemmer ("L'Union méd.," No. 98, 1888) reports G. Sée's clinical lecture delivered at the Hôtel Dieu in Paris. The author of the lecture states that it is not correct to think that hæmoglobin results from the synthesis of ferruginous salts and albumin, that it is not even known whether the ferruginous preparations furnish effectively the materials necessary for the formation of hæmoglobin. Jacoby injected subcutaneously, in a day, thirty-six milligrammes of iron at different times and for a period of three days; 1.4 per cent. was eliminated by the kidneys, and the rest by the intestinal tract. According to Buchheim and Mayer, the author states, the intestinal mucous membrane of young animals into whose jugulars iron has been injected is covered with a secretion rich in ferrous oxide. The iron, M. Sée states, is eliminated mostly by the intestinal tract, as observed by many authors, and the injections of iron are extremely toxic, and produce a diminution of the blood pressure, intestinal trouble, paralytic trouble of the central nervous system, and alterations of the kidneys. The same is not the case when iron is given by the stomach, which does not directly absorb any material; the gastric juice transforms the iron into a chloride, which becomes a soluble oxide in the alkaline medium of the intestine, and in the presence of the organic substances; there it is transformed into a ferrous carbonate which is soluble in carbonic-acid gas, and in organic materials. Finally, the salts of iron are subjected to the action of the sulphur combinations and reducing agents, and then eliminated by the faecal matters in combination with sulphur; the organic combinations of iron, such as albuminates, in the presence of hydrochloric acid, suffer the same transformations. Our diet, it is further stated, must then contain such combinations of iron as will not be decomposed in the digestive tract, which can be absorbed also, and furnish materials for hæmoglobin formation; in the yolk of the egg iron is to be found under the form of a combination of nuclein and albumin. The nuclein is regarded by the author as the predecessor of hæmoglobin in the organism. Milk is regarded equally as containing necessarily materials for the formation of hæmoglobin. The author supposes that the mineral salts of iron do not combine directly with organic matters, but are rather to protect the decomposition of the organic combinations of iron. Sée concludes finally that the imperfect understanding of the physiology of iron in the organism interferes with the establishment of a pharmaceutical rule for different kinds of medicinal preparations of iron, which should be formulated scientifically. The therapeutical indications, however, the author alleges, exclude from the ferruginous treatment all pseudo-anæmias, such as result from atmospheric and alimentary inanition; all kinds of muscular, nervous, or secretory exhaustions; intoxications, and all specific or virulent pseudo-anæmias, such as the syphilitic, tuberculous, cancerous, and rheumatismal. In true anæmias, according to the author's opinion, the ferruginous treatment is justifiable, such as anæmia of hæmorrhagic character, chlorosis, or spontaneous anæmia, not pernicious.

The Inhibition of the Mammalian Heart.—J. A. McWilliam ("Proceed. of the Roy. Soc.," No. 268, 1888) has experimented on a number of different animals, the cat being the animal mostly used. The results are summed up as follows: Section of the vagi produces different results according to whether they are active or inactive before section. In case of the former condition, the section is followed by an increase of the rate and strength of the heart-beats, and the change in the energy

of the auricular contractions is usually more extensive than that occurring in the case of the ventricles. The stimulation of the vagi is followed by different latent periods before the heart stands still. The inhibitory influence after the vagus stimulation usually increases gradually for some time from the beginning. The effects of vagus stimulation on the auricles are: 1. It seems to influence them more readily and powerfully than the ventricles. 2. It leads to a slowing or arrest of the rhythmic beat and weakening of the contraction force. 3. The excitability of the auricular tissue is depressed to direct stimulation after the vagi stimulation. 4. The tone of the auricular muscles seems to be markedly diminished. 5. The foregoing statements are independent of the distension of the heart cavities with blood. 6. The vagi seem to exert an influence on the auricular muscle itself, and do not simply inhibit the motor nerves; the loss of response of the muscle to local stimulation after vagus stimulation points to this view. The effects of vagus stimulation on the ventricles are, besides causing slowness or cessation of action: 1. The contraction force is markedly diminished, the recommencing beats are weak, and beats excited by induction shocks during the standstill are of diminished size. The reduction in contraction force does not bear any constant relation to the degree of slowing, nor does it depend upon the overdistension of the ventricles during the slowing or standstill. 2. The inhibited ventricle presents a marked difference in the change and duration of its curves, the latter being broader near the top and of longer duration; the duration and breadth of the curves are in direct proportion to the interval preceding the curve. 3. The spontaneous rhythmic tendency is inhibited, and the ventricular standstill does not seem to be due to the general standstill of the heart. 4. Though a prolonged absence of auricular beat is usually a necessary condition for the occurrence of a protracted ventricular standstill, the ventricles usually contract in sequence to the artificial excitation of the inhibited auricles. 5. The order in which the heart begins to contract after inhibitions is, normally, ostial parts of the great veins, auricles, ventricles; but it happens that the ventricles recommence to beat before other parts. 6. It happens that the ventricles do not contract in sequence to the auricles, and this seems to be due to the break in the transmission of the contraction from the auricles. 7. The maximum vagus stimulation does not always influence equally the depression of the auricles and ventricles. 8. The effects of vagus stimulation may be counteracted by the application of induction shocks; the artificial beats so obtained are approximately of normal form and duration. The author has found a local inhibitory area on the dorsal aspect of the inter-auricular septum; he describes it as being elongated in shape, its long axis running parallel with the septum. Stimulation of this area causes ventricular inhibition and auricular acceleration; the latter is due, the author supposes, to the escape of the stimulating current to the excitable auricular tissues. The ventricular inhibitions induced by stimulating the vagi and the above-mentioned area resemble each other much in character; they differ in that the local area necessary to inhibit the ventricles requires a current of less strength than the vagus does. The local area remains effective after the administration of a dose of curare, which abolishes the response of the vagi to stimulation; also when the vagi are exhausted from less definite causes. The important structures of the inhibitory area are situated superficially, and are paralyzed either by ammonia or a 4-per-cent. solution of cocaine hydrochloride. The author remarks, finally, that stimulation of the ostial parts of the great veins in certain abnormal conditions, as in asphyxia and in the dying heart, causes an inhibition of the spontaneous rhythmic action of these parts, while in the normal state an immediate and striking acceleration results.

Miscellany.

Reed & Carnrick's Soluble Food.—The "Boston Medical and Surgical Journal" of September 27th publishes the following:

"In the 'Journal' of August 2, 1888, was published an analysis of Carnrick's Soluble Food, copied from and credited to the Report of the

New Jersey Dairy Commissioner. Dr. Newton, the Commissioner, has forwarded to us a circular, recently issued, bearing upon the same subject, to which it is necessary we should, in common honesty, give equal publicity to that given the first quotation. The circular is as follows:

"STATE OF NEW JERSEY,
"OFFICE OF THE DAIRY COMMISSIONER,
"PATERSON, N. J., September 19, 1888.

"In the report of this department to the Legislature for the year 1887 an article by Professor A. R. Leeds, entitled 'Foods for Infants and Invalids,' was published. Messrs. Reed & Carnrick have, in a communication to this office, taken exception to some of the statements therein made, claiming that the amount and character of the ingredients of their food preparations were misrepresented. In order that these gentlemen might receive full justice, I offered to have the analytical work revised by a chemist of reputation, who had never had any business or professional relations with either the State or Reed & Carnrick; and it was also stated that the results of this series of analyses would be published by this office. Accordingly, Professor Elwyn Waller, professor of analytical chemistry at the School of Mines, Columbia College, New York, was requested to purchase a package of 'Carnrick's Soluble Food' in the open market, analyze the contents thereof, and report the results to me. Below is a copy of his report.

"I examined a sample of 'Carnrick's Soluble Food' (purchased by myself from Eimer & Amend). I find that 38.26 per cent. of the albuminoids which it contains are in the soluble form. The sample also gave readily the biuret reaction for peptones. I failed to detect in the food, when moistened, any of the 'hard, unchanged particles of casein' which it has been asserted that it contains. My results lead to the conclusion that the casein in the preparation has been partially rendered soluble by the action of the digestive ferment as claimed by the manufacturers.

[Signed] "ELWYN WALLER, PH. D."

"I append herewith a letter on this subject that I have received from Professor A. A. Breneman, S. B., formerly Professor of Chemistry at Cornell University, now analytical chemist at 97 Water Street, New York.

WILLIAM K. NEWTON, Commissioner."

"NEW YORK, September 18, 1888.

"DR. W. K. NEWTON, State Dairy Commissioner of New Jersey.

"DEAR SIR: The report of your department for the year 1887 refers to certain preparations made by Reed & Carnrick, of New York, in a way which, from my knowledge of their work, seems to do them injustice.

"The statements to which I especially refer are:

"1. That the milk solids in the preparation known as Carnrick's Soluble Food contain merely the dried casein of the original milk, neither changed nor modified by any process of digestion.

"2. That the analysis of this food given in the 'Report of the State Board of Health of New Jersey' for the year 1885 correctly represents it, giving as it does only 10.25 per cent. of total albuminoids.

"3. In the analysis of the preparation known as Liquid Peptonoids ('New Jersey State Dairy Report,' 1887) the proportions of alcohol and albuminoids there given are made the basis of comments which are extravagant in language and unnecessarily severe.

"On February 20, 1888, I made, at the request of Reed & Carnrick, a test of the peptonized milk received in good condition from their factory. Of the albuminoids of the original milk 46.6 per cent. were found to be rendered soluble (that is, no longer precipitable by boiling or by acids). Through the process of digestion such soluble nitrogenous matters must, under the circumstances, consist of peptones, albumoses, and caseoses, products of the modification of the original albuminoids of the milk by digestion.

"Having made many analyses of this food during the past three years, I have never found the proportion of albuminoids to run below 16.5 per cent. as determined by combustion with soda lime. The average of fifteen analyses, made since January 1, 1887, shows 18.96 per cent. of albuminoids. These results also agree well with the analyses of the same food made by Stutzer and other well-known chemists.

"As to the liquid peptonoids, the proportion of albuminoids is limited only by the quantity which can be kept unchanged in solution. Sixteen per cent. of alcohol is necessary to prevent decomposition of

the albuminoids, and no quantity greater than three per cent. of these can be held in solution in this liquid. Many attempts have been made to accomplish a better result, but in all cases the excess of albuminoids was deposited after a time, or (with reduced proportion of alcohol) decomposition of the albuminoids occurred.

"Very respectfully,

"A. A. BRENEMAN,

"Analytical and Consulting Chemist."

Medical Observations in Turkey.—Dr. Morris H. Henry, of New York, who passed a large part of the summer in Italy, Greece, and Turkey, was given the most favorable opportunities of studying the special diseases of those countries, including leprosy. From the Sultan of Turkey Dr. Henry received the decoration of *commandeur de l'Osmannie* and a souvenir of jewels.

ANSWERS TO CORRESPONDENTS.

No. 233.—At the foot of East Twenty-sixth Street.

No. 234.—It is known only in solution.

No. 235.—All that are not expressly stated to be private are open to the profession.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.





DR. R. W. TAYLOR'S CASE OF DERMATITIS TUBEROSA OF IODIC ORIGIN.

Original Communications.

DERMATITIS TUBEROSA OF IODIC ORIGIN: THE SO-CALLED ACNÉ ANTHRACOÏDE IODOPOTASSIQUE.*

By R. W. TAYLOR, M. D.,

SURGEON TO CHARITY HOSPITAL AND TO THE VENEREAL AND SKIN
DEPARTMENT OF THE NEW YORK HOSPITAL.

AMONG the many varied manifestations of the toxic action of iodine preparations upon the skin is the very rare one to which I now call attention. In searching the literature of the subject, I can find but two cases on record, one of which is accepted by inference rather than from positiveness as to the nature of its lesions.

In this essay I hope to present a clear history of a form of eruption which was first prominently brought to notice by Dr. Besnier, of Paris, in a reported case, and called by him "*Acné anthracoidé iodopotassique*." Interesting as this case is, so rapid was its course that it offered, at best, but an unsatisfactory subject for clinical study. In its light its reporter applied to the affection the title mentioned, which will be shown to be worthy of but provisional acceptance. In addition to the study of my case and of the two others, I shall consider the relation of the eruption presented by them to other dermal affections of iodic origin, and shall, I hope, show that most of them are simply and essentially inflammations of the skin. In this line of thought I think I shall be able to trace a distinct correlation as existing between all forms of iodic eruption in the fact that dermal inflammation, or dermatitis, is really the morbid change in all cases except those rather exceptional ones of hæmorrhagic nature. This position being established, the logical deduction is that, instead of there being many varieties of iodine efflorescence, as is maintained by many, there is really but one eruption, which, however, shows itself in various forms, degrees of development, modifications, and transformations.

The essential points of Besnier's case are as follows:

The patient was a man, aged forty years, who applied for treatment for chronic and persistent desquamation of the hands, for which Besnier, in the light of a history of antecedent syphilis, prescribed the iodide of potassium in thirty-grain doses daily. At the end of a week the patient returned with his face and upper part of his thorax covered with veritable tumors, varying in size from a pea to a chick pea, of a coppery-red color, flabby, almost fungating, and presenting numerous depressions similar to those of an anthracoid furuncle or of anthrax. Pressure did not expel the contents, and only blood followed an incision into them. There was no disturbance of the health, though the man complained of a painful and burning sensation in the lesions, which increased rapidly in size.

The immediate cessation of the use of the drug and the application of glycerole of tannin caused the arrest of the course of the eruption, and the subsidence of the tumors in about two weeks. At this time the tumors were almost flat, while some,

instead of being at all salient, were converted into a brownish cicatricial depression.*

Under the title "Circumscribed Phlegmonous Dermatitis due to Iodide of Potassium" Duhring† has described a case in which, after "moderate doses of the drug for some weeks, a slightly inflammatory annular patch appeared on the forehead of the patient, half an inch in diameter, consisting of a number of pin-head-sized vesico-pustular lesions, looking like an irritated patch of ringworm. This extended rapidly, and several similar lesions appeared elsewhere on the face. At the end of a fortnight the original lesion was nearly two inches in diameter, consisting of a circumscribed and defined, irregularly rounded, elevated, firm, inflammatory, violaceous patch. The center was depressed and crusted, the inflammation having subsided. Scattered over the patch, especially about the periphery, there were sebaceous pustular lesions evincing a disposition to rupture. When pinched or cut into, the yellowish points bled, but did not exude their contents."

My own case is as follows:

M. F., American, aged twenty-six, a thin and pale man, of good habits, entered the New York Hospital service of Dr. G. L. Peabody, who kindly placed it at my disposal for observation on December 23, 1887. Three years previously he had a chancre, which was followed by secondary manifestations. He followed treatment for a time, and resumed it at intervals in consequence of the appearance of superficial syphilitic lesions. He enjoyed fair average health for three years. Then, about a month before his entrance into the hospital, he began to suffer from pain in the head, not localized, but more severe in the forehead and eyes. His sufferings began toward dark and increased in severity during the evening and night. He also complained of chilly sensations, and his temperature ranged from 99° to 102° F. The spleen was much enlarged. For six days he took twenty grains of the iodide of potassium thrice daily, when the dose was increased to twenty-five grains. Under this treatment, in twelve days (January 3, 1888) he was much improved generally, his cerebral pains were much less intense, and the spleen was much diminished in size. At this time the iodide was increased to forty grains three times a day, and within fifteen hours the cutaneous effects of the drug began to manifest themselves. Notwithstanding the dermal inflammation, it was deemed necessary, on January 16th, to further increase the dose of the drug to sixty grains, and three days later to eighty grains thrice daily. In the course of a few days so marked was the improvement in the cerebral symptoms and in the general condition of the patient that the dose was reduced to thirty grains three times a day. Under this treatment the patient became so well that he left the ward and came to my clinic as an out-patient.

A description of the eruption produced by the iodide of potassium, which was observed by me during its whole course, can but be given irrespective of the chronology of the case.

In the chromo-lithograph are well shown the appearances presented by this eruption in all its phases of evolution. Upon the forehead, on the right temple, above and rather external to the right eye, upon the right cheek, and upon

* Read before the American Dermatological Association at its twelfth annual meeting.

* "Annales de dermatologie et de syphiligraphie," page 1882, 171.

† "Medical and Surgical Reporter," Dec. 13, 1879.

the neck, are a number of perfectly developed tumors, with several in the process of growth. Symmetrical lesions existed on the left side of the face and neck.

These tumors, for such they really were, were of a deep-red color, mostly of round outline, some being somewhat oval, and varied in size from that of a three-cent silver piece to that of a quarter of a dollar. They were in structure both pedunculated and sessile. The large tumor over the temporal region was so much larger upon its surface than at its base that it could readily have been strangulated with a ligature. As it increased in growth it became so much more pedunculated that it presented the shape of a mushroom. The tumor on the side of the nose was of similar structure. All the rest of the tumors had sharply defined vertical margins, and may truly be called sessile. Around all the tumors there was a red areola, so thin that it was very evident that the inflammatory process was sharply limited to the new growths. Palpation showed that in structure these tumors were soft, spongy, and non-resistant. The larger ones conveyed to the fingers a sensation of bogginess and of false fluctuation. Over the surface of the majority of these lesions there was a large number of minute cribriform, trumpet-shaped openings, from which a small quantity of pus could be made by pressure to exude. In the untreated condition this pus dried upon the surface of the tumors, and formed crusts of various sizes. Upon the large temporal tumor about a dozen minute deep-yellow crusts may be seen depicted, each of which covers one of the trumpet-shaped openings spoken of. Upon the other tumors the effused pus has produced more or less incrustated coverings, which, being removed, reveal the typical cribriform openings.

The foregoing description presents the essential features of this eruption in its untreated state. Applications of a watery or greasy nature removed the pus-incrustation, and permitted a further study of the lesions. Owing undoubtedly to the fact that from the necessities of the case the use of the toxic agent was kept up in increasing doses, the inflammatory action in the lesions persisted, and they grew apace. They increased considerably in area, and reached a height, in some instances, of nearly half an inch, and in others, and the majority, of one sixth of an inch. In general, a tumor became, as we may term it, fully developed in less than a week, after which, however, it might grow larger. During the whole of its period of development the little cribriform openings leading to minute abscess-cavities in its body gave exit to pus. When the tumor became fully developed, however, this feature ceased almost entirely, the openings disappeared, and it is fair to assume that the minute abscess-cavities closed or became collapsed. From this time forth the secretion, if any was allowed to form, came from the surface of the tumors. At this time the surface of these lesions presented a uniform warty appearance, comparable to that of simple venereal vegetations. It may be described as minutely mammillated or warty, but falling short of deserving the adjectives papillomatous, vegetating, or fungating. I can readily see, however, that, in the absence of treatment, and with the continuance of the toxic iodic action, these tumors might become exuberantly papillomatous.

Reaching, then, full development in about a week or

ten days, these lesions showed a tendency to run a chronic, indolent, or aphlegmasic course. They caused no suffering, were troublesome only in their disfigurement, and seemed to have come to stay. Under the use of equal parts of blue and zinc ointments, they remained unchanged, but began to wither promptly when painted daily with a solution of perchloride of iron. Even under this treatment their subsidence was slow, and at the end of a month pigmented patches, decidedly but rather superficially atrophied, were left.

These iodic tumors begin as localized congestive swellings of the skin in the form of round or oval patches. The two red spots on the outer side of the right eyelid convey a good idea of their commencement. There may or may not be evidence of concomitant inflammation of the sebaceous follicles at first, but these structures, if present, become involved. The further growth of the tumor is in both area and height. The lesions as they appeared on the cheek looked at first like those of acne indurata, and, had they progressed no further than the papulo-pustular or tuberculo-pustular stage, could with propriety have been called those of severe iodic acne.

The local concomitant symptoms in this case were very mild, the patient simply complaining of slight pruritic heat. There was no systemic suffering, such as we so frequently see in cases of marked iodic intoxication.

With the foregoing facts before us, I think that there can be no question as to the existence of a localized, circumscribed dermatitis of iodic origin, to which the name dermatitis tuberosa applies perfectly. The inflammatory condition of the skin is evident, and its production of tuberosus lesions has been, I think, clearly shown. The term *acné anthracoides* is, in my judgment, too fanciful, and far, pathologically, from being precise. It is true that, by an effort of the imagination, a semblance between the openings in these tumors and those of anthrax or of anthracoid furuncles may be drawn, but here the likeness ends in every particular. Anthrax and its congeners are subcutaneous connective-tissue affections. The essential lesion in the morbid change in this iodic eruption is dermatitis, and the peculiar involvement of the sebaceous glands, with their cribriform openings and pus crusts, are only secondary features of the process. The further development of the tumors into sessile and mushroom forms, presenting a moderately warty surface, gives striking evidence of exudation and cell infiltration into the papillæ cutis, and is the natural outcome of the inflammatory process. Still further hypertrophy may be observed, in which case the adjectives fungating, vegetating, or papillomatous may be applied in a qualifying sense.

My studies in this case and in many other cases of the cutaneous manifestations of iodic intoxication have convinced me that iodic eruptions are most correctly and simply divided into two classes—the hæmorrhagic and the dermal inflammatory. The petechial or purpuric eruptions are undoubtedly the result of some change induced by the drug in the small vessels, and perhaps in the constitution of the blood. The essential lesion in the majority of cases of iodic eruption is dermatitis pure and simple. The sebaceous follicles may become inflamed and form minute abscess-cavities or pustules, but this prominently striking feature is

only secondary to the dermatitis of papular, tubercular, or diffuse patchy form which underlies it.

The tendency of iodic eruptions to present vegetating and fungating features has led observers, in my judgment incorrectly, to make new and separate forms of these affections, whereas they are simply evidences of the extreme development of the inflammatory process, due in some cases to a highly pronounced idiosyncrasy, or in others to super-saturation of the system with the drug. During the past two years I have had the rather unusual experience of seeing three well-marked cases of bullous eruption of iodic origin, in which, after rupture of the lesion, surfaces varying in appearance between the slightly warty and the vegetating were left. A careful study of these cases, however, convinced me that the essential morbid process was the dermatitis, that the bullous element was, owing to tissue peculiarities, the outcome of that inflammation, and that the subsequent warty surfaces were due to its intensity and persistency. All cases of bullous iodic eruption show this condition of thickening of the skin in marked contrast to pemphigus. Those not uncommon cases in which papules, papulo-pustules, tubercles, tuberculo-pustules, diffuse inflammatory patches (particularly about the face and often of fungating appearance), and subcutaneous nodular infiltrations are found co-existing can, in my judgment, only be explained on the ground of dermatitis, all the modifying phenomena being secondary to it. In the light of these considerations, therefore, I think that I am warranted, by reason of its simplicity, in applying the term *dermatitis tuberosa** to the eruption already described, and to claim for it lineal relationship to other iodic dermal lesions. As the papule grows into the tubercle, so may both grow into the tumor.

40 WEST TWENTY-FIRST STREET.

SURGERY OF THE BRAIN,

BASED ON THE PRINCIPLES OF CEREBRAL LOCALIZATION.†

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THE purposes of this discussion and the division of labor between the essayists of the evening have made it necessary that the following remarks should be confined, as strictly as circumstances may permit, to a consideration of the essentially surgical aspects of the general topic of cerebral localization. To this end I prefer to restrict myself in the main to the surgery of cerebral abscess and to that of intracranial tumor. These are mainly chronic lesions, whose symptoms and signs are to be recognized by the principles already so ably rehearsed by Professor Mills. Indeed, I wish to be excused from considering, except in a casual way, operations for relief of recent hæmorrhage, a surgical field in which numerous brilliant results have been of late obtained, as well as those for epilepsy of traumatic origin, except so far as they are caused by abscesses or

tumor, and those in which operation is indicated by a study of the subjective rather than of the objective features; furthermore, I must also omit all immediate operations for gunshot or penetrating wounds of the cranium, unless they, too, come under the proper category.

Operations are undertaken upon the skull, as they are upon the abdomen, either for exploratory purposes or for relief of a recognized lesion. There is a rapidly growing tendency in favor of exploratory operations in each locality, and, as our technique improves, our confidence in their efficiency and safety becomes strengthened. There was a time when laparotomy for diagnosis was considered quite unjustifiable; now it is often our duty to perform it. There was a time when the operation of trephining had a mortality rate considerably over 40 per cent.; now in proper hands it has fallen below 3 per cent. Surely many others can say, as can the writer, that they have never lost a patient as the result of this operation. This means really a great deal. Indeed, it is easily susceptible of demonstration that exploratory trephining is the safer of the two. Patients have died immediately after the puncture of the liver or the lung by the aspirating needle, but after similar puncture of the brain perhaps never.* These and other considerations induce one, then, by precept as by practice, to encourage in every legitimate way the early resort to exploratory trephining.

In the preparation of that which follows, the writer has not hesitated to avail himself of the labors and studies of others, and freely acknowledges his indebtedness to the work of Dr. Ferrier, as well as to the writings of those masters of cerebral surgery, Professors Bergmann, Macewen, and Horsley, and indeed to every essay upon the subject which he could utilize.

Cerebral Topographical Anatomy.

Here, as elsewhere, our surgical procedures must be guided by accurate anatomical data, and consequently, following the natural order, we must first consider so much of the regional and surgical anatomy of the cranium as concerns present purposes. In other words, we may properly look to the neurologist to make the diagnosis, but with equal propriety he may expect from us the ability to find the lesion. Not much less astonishing than the discovery of the planet Neptune at the spot determined by the computations of Le Verrier was the first discovery of a cerebral lesion at exactly the point indicated by a careful study of somatic disturbances; both were wonderful examples of inductive reasoning.

The areas which most concern the surgeon in this kind of work are those which cluster along the fissure of Rolando, and the proper determination of the locality of this fissure is to the surgeon what the long base-line is to the geodetic surveyor. Various rules have been laid down by which the location of this fissure may be determined.

* My friend Dr. Hyde has paid me the compliment of adopting this name as the heading of an interesting article on iodic eruptions.

† Read before the Congress of American Physicians and Surgeons at its first triennial meeting, Washington, September 19, 1888.

* Since this was written the writer has seen Weir's recently published statement ("Am. Jour. of the Med. Sci.," September, 1888, p. 229) that he has twice seen death follow the introduction of needles into the brain, though to what depth he does not state, nor does he give the size of the needles. (*Vide* below.)

Without considering all of them, there are two or three of which it is worth while briefly to speak. First, it is necessary to accurately mark out two or three prominences about the skull as points of departure: the root of the nose, known in this sense as the *glabella*; the external occipital protuberance, known also as the *inion*; the point at the vertex of the skull, half way between these two prominences, the *bregma*; the external angle of the orbit, the tip of the mastoid process, the lower border of the alveolar process of the upper jaw—these are all landmarks of importance in one or the other of the methods referred to. Before endeavoring to make out any of the deeper fissures, by external aids, the scalp should have been shaved. The fissure of Rolando has its upper end about five centimetres back of the bregma, but it does not run quite up to the middle line; its lower end lies about half a centimetre behind the auriculo-bregmatic line and a little above an imaginary horizontal line, parallel to the alveolar-condyloid line, projected backward from the superciliary ridge; thus the lower end of the Rolandic fissure will be found about six centimetres above and a little behind the external auditory canal—in other words, its lower end is about an inch behind the bifurcation of the fissure of Sylvius.

Mr. Hare, of Edinburgh, has shown in the "Lancet" (March 3, 1888, page 408) that the distance of the upper end of the fissure of Rolando is fifty-five and seven-tenths per cent. of the total distance from the glabella to the inion; also that the angle formed by the fissure with the middle line of the skull is sixty-seven degrees. The fissure itself extends about three inches and three fourths along this line, running from above downward and forward.

At the suggestion of Professor Chiene, Dr. Wilson constructed a scale of measurements for localizing fissures according to these data, and which is known as Wilson's *cyrtometer*; a home-made instrument of this kind I show you here. One strip passes coronally around the forehead, being fitted over the glabella and external angular process; another strip, at right angles, passes backward from the glabella to the inion. This strip is marked with two scales of letters, and these are located at points accurately marked out, according to the proportion of fifty-five and seven tenths to one hundred. Should the distance of the inion from the glabella be found to be at a point marked with a capital *C*, the sliding scale on the instrument is put at a corresponding point marked with a small *c*; from this a projecting arm, fixed at an angle of sixty-seven degrees, will be easily bent down, directly over the Rolandic fissure, and with an aniline pencil this may be traced on the surface of the scalp. Accurately speaking, the fissure of Rolando is not a perfectly straight line, inasmuch as it forms a slight curvature opposite the lower end of the intraparietal sulcus, its lower half being directed a little more vertically; nevertheless, the line thus marked out will be sufficiently accurate for surgical purposes.

The bifurcation of the fissure of Sylvius corresponds to a point an inch and a quarter behind and a quarter of an inch above the level of the external angular process of the frontal bone.

The fissure of Sylvius divides into a short anterior and

long posterior branch; it commences an inch back of the external angular process, along a line drawn from this process to the occipital protuberance; from this point a straight line to the center of the parietal eminence marks with considerable accuracy the course of the posterior limb of this fissure.

The H-shaped junction of the parietal, the great wing of the sphenoid, the frontal, and the squamous bones was termed the *pterion* by Broca. The point of division of the fissure of Sylvius is just underneath the pterion. The line of the posterior branch has just been indicated; the anterior branch runs upward and forward almost underneath the line of the sphenoido-squamous suture. This anterior branch is important; it is the anterior boundary of the so-called motor region, while the posterior branch bounds the same area inferiorly. The precentral or vertical sulcus, which is not a fissure, is of importance, because it divides two convolutions of very different function, and because on each side of it are ranged convolutions in which exist the most extensive variety of motor functions. It runs parallel with and just behind the coronal suture, passing upward and slightly backward, reaching about to the center of the fissure of Rolando, and there bending forward. The inferior frontal sulcus is about opposite the temporal ridge, where it crosses the coronal suture at the point termed by Broca the *stephanion*; or, to be a little more accurate, this point may be termed the lower stephanion, while the upper is at the point where the superior temporal ridge crosses this same coronal suture.

Behind the fissure of Rolando we meet with the intraparietal sulcus which is the posterior boundary of the motor area; its commencement is opposite the slight knee-like bend alluded to in the fissure of Rolando; it passes upward and away from this fissure, and thus forms the ascending parietal convolution; it runs directly backward, and finally nearly parallel to the longitudinal fissure, passing around the outer end of the parieto-occipital fissure which is at the apex of the motor region.

As Amidon has shown ("Medical News," June 21, 1884), the first or superior frontal convolution commences about two centimetres and a half behind the bregma and passes forward nearer the median line toward the orbit; the second frontal occupies a similar but more anterior and lateral position; while the third frontal lies wholly in front of the auriculo-bregmatic line, on a plane five centimetres above the external auditory meatus; its folded part is about two centimetres and a half in front of this line, or about two centimetres behind the external angular process of the frontal bone. The ascending frontal convolution is in front of the fissure of Rolando, the ascending parietal back of it, while the fissure of Sylvius and its posterior division separate the ascending parietal above from the first temporo-sphenoidal convolution beneath. The more exact localization of motor areas can be seen at a glance from the accompanying diagrams, while, for a more accurate description of their exact location, I would refer to the paper of Mr. Horsley in the "American Journal of the Medical Sciences" for April, 1887, page 342; Dr. Roberts's excellent monograph on the "Operative Surgery of the Brain" (Philadelphia, 1885); to a paper by Mr. Hare in the "Lancet" for March

3, 1888, page 407, and to the various monographs and treatises on diseases of the brain which need not be mentioned in detail.

In this connection it might be stated that lesions of the dura over these motor areas are by no means always to be distinguished from the lesions of the cortex beneath; and it is a well-established fact in surgical pathology that various disturbances of the dura can call forth symptoms of profound severity. The researches of Duret "On the Rôle of the Dura Mater and its Nerves in Cerebral Irritation" have shed a great deal of light on the functions of this membrane. In this respect Duret shows that the dura mater contains an abundance of sensory nerves which are extremely excitable, these nervous filaments being supplied from the fifth pair. It is known that irritation of the branches of the fifth often produces reflex spasms which may radiate down the cord, mainly, but not always, on the same side; or which may produce contractures of the muscles of organic life, pain, hyperæsthesia, neuralgias, and many other reflex sensory or motor phenomena.

These symptoms tend to diffuse and invade neighboring groups of muscles. They have never the localization, the measured and purposed character, of contractions which belong to lesions of the cortex. They frequently become transformed into permanent contractures. The reflex vasomotor disturbances due to irritation of the nerves of the dura mater consist in spasms, or congestive paralyses of the cerebral and ocular vessels, either on the same or the opposite side. These facts are important to pathologists, as they show the great influence of irritation of the nerves of the dura mater on cerebral vascular conditions and on the organs of sense, and shed light on the causation of secondary effects in cerebral traumatism—that is, on the congestions and inflammations of the cerebral membranes. Destructive lesions cause local anæsthesia of the dura mater.

I have taken this statement *in extenso* from Duret because of its importance. These observations on lesions of the dura, coupled with those confined to the brain proper, lead me to simply make this remark in addition to what has already been said: It is enough for the surgeon that a lesion of some kind can be located with reasonable accuracy. It matters not whether this is an old irritative lesion of the dura, an acute suppurative process anywhere between the bone and the brain, or an abscess or a tumor in the brain itself. The indication for exploration is just as strong, and it is the surgeon's bounden duty to penetrate the bony roof of the brain and be prepared to do anything which may appear to be indicated, just as in abdominal surgery one begins an operation as an exploration, being prepared to meet the indication upon anything which may be discovered within.

While the cerebellum is, in the future, to be by no means exempt from surgical invasion, we are, nevertheless, not here bewildered by such a wealth of topographical boundaries and divisions. It lies entirely beneath the tentorium, which divides to form the lateral sinus. This sinus follows a line nearly corresponding to the superior curved line of the external occipital surface, but a little below it. It would be best in operating to allow, at all events at first,

half an inch, and even then to perforate the bone with caution. It must also be remembered that the torcular Herophili is seldom exactly centrally situated—most commonly a little to the left—and that the region three quarters of an inch on either side of the middle line had better be avoided, at least for the first perforation.

Other facts to be borne in mind are that children and the aged have no diploë; that the crania of the aged may be extremely thin; that the frontal sinus is not to be ignored in operating in its neighborhood; that the superior longitudinal sinus is beneath the middle line of the vault; and that the middle meningeal artery lies about an inch and a quarter back of the external angle of the orbit, and is sometimes almost buried in a bony channel.

When and Where can One Trephine with Safety and Where should One avoid Perforation of the Bone?

Probably the safest rule to follow is that the first application of the trephine should be over those well-known areas of the skull which do not overlie large vascular channels, as, for instance, those points where one may wound the middle meningeal artery, the superior longitudinal sinus, the lateral sinus, the occipital sinus, and so forth; but, after an opening has been made at points free from this danger, it may be extended in any direction, to any required extent, with a feeling of security, inasmuch as the larger the opening, the better our ability to cope with hæmorrhage, no matter what its source. Hæmorrhage from the middle meningeal artery can, under these circumstances, be easily arrested. Our greatest hesitation would be with regard to opening one of the sinuses of the skull. Two dangers attend such an accident—one of fatal air embolism, as has happened to Volkmann in the removal of a sarcoma of the vertex of the skull; the other, that of profuse hæmorrhage. The former danger is almost a theoretical one, since operations on the brain proper are not nearly so likely to lead to this accident as lesions involving the bony skull itself. The latter is one which experience has taught is by no means fatal; for, should hæmorrhage thus occur from a sinus, the sinus itself may be plugged, or its wound may be closed with a fine needle and suture. Indeed, Bergmann entirely removed a part of the superior longitudinal sinus in one of his cases. The researches of Schellmann have shown that the integrity of one sinus at least may be destroyed without any serious effect upon the brain itself; though, theoretically, one must perhaps hold to the opinion that the liability to œdema of the brain will thereby be increased.

Parts of the Brain which may be considered as Proper Fields for Operation.

A variety of cases, some slight, some terribly severe in their destructive effects, have shown that, after all, there is but a comparatively small portion of the brain which can not be considered, in some sense, superfluous. We find that, after destruction of one part, another part, by a species of substitution, takes up its action; and we find from experiments on animals that large portions of more than one hemisphere may be removed without serious consequences. We may reasonably say that a tumor or an abscess in the

brain, whose boundaries are continually enlarging, and which is consequently causing an increasing amount of destruction, is doing more harm than can be done by the surgeon's knife which shall judiciously remove it, and thus take away the possibilities of harm caused by such a lesion. We may say, almost without question, that any part of the hemispheres is amenable to surgical attack, and at least a large portion of the cerebellum; only the basal ganglia, the pons, and the medulla can now be considered sacred, partly on account of their inaccessibility, partly on account of their primary functions. Further and more extensive experience may in some slight degree modify this statement, but it seems as though we were justified in making it with a reasonable degree of assurance. If we have any doubts in the matter at all, they are with reference to the cerebellum. The cases of Hulke, Horsley, Weir, Suckling, and Hahn have shown that this part of the brain is amenable to surgery, but we are not sure as to just what extent. The case of Detmold, elsewhere alluded to, showed years ago how deep collections of pus might be evacuated; and a case recently reported by Dr. Blake, of Baltimore, in the "Philadelphia Medical Times," July 2, 1888, also the celebrated case of which the specimen is now in the Harvard Museum, or that reported in the "Medical Press of Western New York" for August, 1888, along with many others, will show that extensive or deep wounds are not necessarily fatal.

Cerebral and Cerebellar Abscess.

In his recent masterly paper ("Archiv f. klin. Chir.," xxxvi, 1888), Bergmann, in considering this topic, lays stress on the fact that abscess of the brain in adults has but one result—death; and that the surgeon's knife offers the only relief. The greatest difficulty lies in exactly diagnosing the nature and locality of the trouble. So far as we know, there is no such thing as idiopathic abscess of the brain; it is always a sequel either of some external wound of the head or of some extension from diseased surrounding bone. The only exceptions to this statement are to be found in the case of pyæmic or tuberculous abscesses. Multiple abscesses are almost invariably metastatic, and consequently imply pyæmic processes, though a few exceptions have been reported.

Bergmann assigns a distinct place to acute cortical abscesses which form just underneath a point of fracture or of injury, which are to be distinguished by disturbance of healing, the altered aspect of the wound, or the escape of pus; or, if these be not noted in time, probably later by the symptoms of an acute meningitis. Nevertheless, it is not always easy to distinguish between such an abscess and a suppurative meningitis; either may cause paralytic phenomena. The latter is perhaps more betokened by the changes of the incompletely healed wound than by pathognomonic symptoms. A leptomeningitis may develop with almost lightning-like rapidity, whereas time is required for the formation of an abscess. We scarcely expect an abscess to give characteristic signs before the second week. If slower than this, ample time has been given for such adhesions to form as may constitute an effectual barrier to the advance of pus. Under such circumstances we have a lo-

calized collection of pus rather than a diffuse meningitis—one which can be easily opened and drained.

There is a notable difference between these superficial abscesses which develop in a few days, usually with symptoms that remind one constantly of a leptomeningitis acuta, and the formation of those deeper collections of pus in the brain which may lie dormant for weeks, months, or even years. The former are the direct result of surface lesions. The latter are not to be thus explained. Only exceptionally do we see evidences of extensive external lesions. Even violent injuries, such as cause concussion, are not often followed by them. They correspond to the abscesses which form in bone—*e. g.*, the femur—and are the result of intermittent processes. Between the pus and the cortical surface lies apparently healthy brain-matter; whether the exciting impetus is transmitted along the lymph-vessels or the blood-channels is not now clearly made out.

It is the peculiarity of cortical abscesses to follow more or less superficial wounds; the deep ones seldom if ever have such a history. The latter more commonly are associated with foreign bodies or particles of bone driven deeply in. Protracted external suppuration does not seem to predispose toward them of itself, unless followed by caries or necrosis.

Another and non-traumatic class of abscesses is that connected with disease of the middle ear, or non-traumatic suppuration in other parts of the bony envelope of the brain. Nearly half of the entire number of cerebral abscesses have this origin. It is only chronic otitis media suppurativa which leads to this result. Acute brain symptoms have followed acute ear trouble, but never a brain abscess. The method of their extension is too well known to need description here.

The position of abscesses connected with middle-ear disease is of surgical interest. Almost without exception they are found either in the temporal lobe or in the cerebellar hemisphere; in children most commonly in the former; in adults in the latter.

One of the most uncertain features about all of these deep abscesses is the date of their origin. Suppurative processes in other parts of the bony skull have a similar influence in determining deep brain abscess. Perforating tubercular disease of the bone at any point may lead to abscess beneath; so may caries of the ethmoid or frontal, or ulcerative disease in the nose.

The symptoms of deep brain abscesses may be divided into three groups, according to their cause:

1. Those which are inseparable from indications of suppuration. Such are those disturbances which may follow any deep-seated foreign mass.
2. Symptoms of increased intracranial pressure and disturbed relations.
3. Special symptoms by which the locality of the disturbance may be ascertained (localization).

(1) Of all these symptoms and signs, fever is the most significant. This may be very irregular with long periods of intermission. This is of less value when there is coincident suppurative disease of the middle ear, since it may thus be accounted for.

(2) The most significant symptom of increased pressure is headache—a persistent headache, varying in degree, always worse when the patient's temperature is raised. Everything which can increase intracranial blood-pressure—use of alcohol, too low position of head, etc.—increases the pain. In middle-ear cases the headache is more fixed and localized. It is increased by percussion over the affected area.

Other pressure symptoms are less frequent in abscess cases and more variable. Marked alterations of pulse and respiration rate, a pulse even as slow as 30, and Cheyne-Stokes respiration with coma, have been noted. These alarming symptoms may shortly subside, however, and such changes for the better and worse are much more common in abscess than in brain tumor. Choked disc is also less frequent in cases of abscess.

(3) Localization symptoms are often conspicuous when the abscess is in the motor area, the reverse when in the frontal, temporal, or occipital lobes. The local disturbances may be easily confused with those caused by simple degenerative processes (softening), such as in all probability are actually taking place around the abscess. In case the abscess subsides into inactivity and is followed by cessation and contraction, the local symptoms may much improve. The pus collecting in the depths of the hemispheres may only separate the motor impulse conducting paths, without materially affecting their integrity. So long as the gray matter is undestroyed, the collection of pus may assume large dimensions, even involve almost an entire hemisphere, and still no intense motor disturbance appear. But the nearer it approaches the cortex, and the more destruction it causes there, the more we may expect motor disturbances.

Like others, Bergmann lays considerable stress on local elevation of temperature over the abscess. General experience shows this to be a sign of great value when met with, but one the absence of which need by no means negative a diagnosis if made on other rational grounds.

The same writer also maintains that there is less probability of early recognition of abscess in the frontal lobes, since it is well known that these may be almost totally destroyed without symptoms. But the larger it grows and the further its encroachments extend posteriorly, the more likely are we to get disturbances of speech, or paralytic features about the face or eyes. Bergmann says facial paralysis implies that the abscess in the frontal lobe—if such there be—is large.

Certain peculiar features are alleged to pertain to abscess in the *temporal region*. Thus Wernicke has stated that there is a peculiar disturbance of speech which points especially to this lobe as the locality of the disturbance. This is the confusion of correct with incorrect or fictitious ("*erdichteten*") words; it is a species of aphasia implying interruption in co-ordination which results from trouble at this point.

Abscesses in the cerebellum for the most part go unrecognized. Frequent and severe attacks of vertigo, along with headache, loss of sensibility and of motion, are indications not usually lacking. According to Nothnagel, a staggering or swaying gait would imply lesion of the vermiform

portion. But a collection of pus above the tentorium may produce similar disturbance in the underlying cerebellum by mere pressure.

In a paper on "Surgical Interference in Cerebral Abscesses," by Dr. Nancrede, of Philadelphia ("Transactions of the American Surgical Association," vol. ii, p. 85), some valuable hints concerning the diagnosis of cerebral abscesses are given. He believes that such abscesses are accompanied in most cases by a subnormal temperature. Where a high local temperature is noted, either the pus is from a localized inflammation of the arachnoid, limited by adhesions, or else there is a meningitis in addition to the abscess. If originating from ear disease, where the abscess is secondary, the temperature is usually above normal, although not invariably so. When the motor area is involved, diagnosis is easy; where the motor area is not involved or has not been primarily affected nor injured, chance only can lead to a determination as to the location of the pus. His paper is additionally valuable on account of the cases to which it calls attention.

In the "Edinburgh Med. Journal" (May, 1887, p. 896, and June, p. 995), McBride and Miller have given some valuable hints as to the diagnosis and treatment of cerebral abscess due to disease in the ear. When the auditory nerve is intact the brain abscess is, in all probability, located in the neighborhood of the tympanum. In this case one should trephine above and a little in front of the external meatus. It would be well to so plan the external incision that one can also attack the mastoid process. When the auditory nerve is involved, the pus will usually be found beneath the tentorium cerebelli. In case of thrombosis of the lateral sinus, one had better abstain from operation. If, instead of an abscess, one comes down upon a diffuse meningitis, the operation will still be serious. McBride calls attention to the fact that in suppuration of the mastoid cells there will usually be pain on pressure over the process. In cases of chronic suppurative disease in the ear, it is better not to wait too long before opening the mastoid, if there is any reason to suspect the presence of pus.

In the treatment of mastoid disease it occasionally happens that after opening the mastoid and detecting pus the surgeon comes to a halt because he considers that he has done enough in the absence of clear indication to the contrary. It may happen that subsequently cerebral symptoms supervene which point toward an abscess in the brain; in such a case it will be proper to enlarge the original mastoid perforation to the necessary extent, to expose the dura, and to explore with a hollow needle. If pus is found, the abscess is treated as usual; if no pus is found, no harm will have been done.

It has been a number of times shown that the temporo-sphenoidal region of the brain better tolerates surgical interference than almost any other part of it. If it could be generally taught that, anatomically and surgically, no good reasons exist why opening of the dura and draining of the middle fossæ should not be practiced in cases of suppurative meningitis, we should not have the sad fact to contemplate that so many of the cases of cerebral abscess due to ear disease die unrelieved by mastoid operation. If cere-

bral abscess can be excluded in favor of an abscess in the cerebellum, no hesitation should be felt in trephining through the skull below the tentorium. Mr. Barker has laid down an excellent rule in such cases—namely, to explore the opening of the mastoid vein at once; if purulent softening has extended backward toward the cerebellum from the ear, some of the discharge will be found oozing from this opening. Not enough attention has been paid to his observations.

In the general diagnosis of cerebral abscesses it is necessary to remember that there is usually a latent period, devoid of all brain symptoms, which may continue for an indefinite time, from a few days to several years. The stage of active symptoms is usually ushered in by more or less headache and slight rise in temperature; local or motor symptoms can be expected only when the abscess is in the motor area of the brain. With regard to the operative procedure, it is worth while to remember that Renz published in 1867 a case in which a traumatic cerebral abscess was reopened on account of symptoms of compression. In this case Renz practiced regularly a series of aspirations, emptying the abscess cavity through a small hollow needle twice a day for six weeks. Aspirations were discontinued during the sixth week, but had to be resumed five days later, and were continued six weeks longer. The patient recovered in half a year, and has since remained well. This is the first case on record of systematic and intentional aspiration of cerebral abscess. At the present day no one would think of practicing this method, but would make continuous drainage. When we remember that abscesses large enough to cause cerebral symptoms usually have a cavity at least large enough to find and empty, we should be less unwilling to trephine and explore when we suspect the presence of one.

In 1855 Detmold opened the lateral ventricle with a knife and evacuated a quantity of pus, his patient dying later. In this instance he set an example of free evacuation of pus from the depths of the brain, which surgeons were uniformly slow in following.*

The question whether it is best to wash out an abscess in the brain after it has been freely opened is one not yet positively answered, authorities disagreeing; however, it would seem as clearly indicated to thus cleanse a pus cavity in the brain as anywhere else, especially so where the pus is as foetid as it is in many of these cases. Fenger has suggested that possibly œdema or encephalitis in the neighboring portions, which are more dangerous than the abscess itself, may be by this measure prevented.

Operation for Abscess of the Brain.

Directions have been given by so many writers as to how to proceed in cases of suspected or certain abscess of the brain that it hardly seems necessary to repeat them

* Dr. Detmold's case was reported in "The American Journal of the Medical Sciences," 1850. The brain was exposed on account of necrosis; as exposed, it was felt to be fluctuating; the opening was in the left frontal region, twelve centimetres square. Some four ounces of pus were evacuated, and the patient immediately opened his eyes and answered questions. The patient died over a month later, and, on autopsy, pus was found in both ventricles.

here. The reader interested in securing explicit directions is referred to the papers of Fenger and Lee, "Am. Jour. of the Med. Sci.," July, 1884, p. 17; Nancrede, "Med. News," Jan. 28, 1888; and Weir, "Med. Record," April 9, 1887. These operations are to a considerable extent satisfactory, since the lesions can be diagnosticated with some certainty. The indication is not, under all circumstances, to operate on every case of abscess, or on those of every part of the brain; we have probably yet to learn, so far as clinical experience can teach us, what to attack and what to leave alone.

Traumatic brain abscesses have long been known, but until recently operators have satisfied themselves with incising the dura and doing nothing more. Quesnay and La Peyronie expressed a wish to explore deeper, but yielded to the conservatism of their day and did not. Dupuytren was the first to put a bistoury into the brain and thereby evacuate pus. Unfortunately, the death of his patient for a long time deterred others. Perhaps the next one to imitate him was Detmold. With the introduction of aspiration methods the hollow needle came naturally to be suggested for brain exploration. The dangers of this procedure are certainly small; indeed, the more certain the diagnosis of abscess, the less the danger. And yet less than five years ago, when the writer ventured to read a paper on this subject and to report cases in which he had resorted to it without harm to the patients, more than one friend whose judgment he valued advised him not to publish it lest he bring discredit on method and writer alike.

The most painstaking investigations which have been made in this direction are those of Spitzka ("Trans. of the Am. Neurological Assn.," 1887). He has made careful search in brains after exploratory puncture had been done. In an autopsy three months after three needle punctures had been made no indication of puncture could be found in dura, pia, nor the surface of the brain. After making thin sections of the region involved, three dark-bluish lines were found extending vertically to the surface. These were found to be minute pencils of coagulated blood. There were no spider cells, nor indications of the slightest inflammatory disturbance, nor did neighboring nerve cells show any change. Several times after injecting foul or irritating material into the brains of dogs, for experimental work, he failed absolutely to find any track of the needle or trace of its having entered the tissues, even though the foreign material injected through it was found encapsulated.

In one case, however, after thirteen months, the entire channel made by the needle was plainly visible. The obliteration of the needle tracks was most conspicuous in the largest and most vigorous animals.

Referring to the depth to which needles may be passed, he advises that they should never be introduced so far as the internal capsule, the contiguous ganglia, nor the lateral ventricles, merely for exploratory purposes, unaided by positive clinical indications of the location of the disease. Certainly the dangers of exploration with a small aspirating needle are small.

But little more dangerous is an incision into the cortex. Among the hundreds or thousands of experiments on the brains of animals, how little evidence of the harmfulness of

this measure can be adduced! Almost invariably no unpleasant effect follows.

Next to the danger of doing anything of this kind, that from hæmorrhage has been the greatest in common estimation. But even this has been greatly overestimated. Most of the blood comes from the vessels of the pia rather than from the brain matter proper. The picture of a traumatic apoplexy may be most unpleasant, but is a most improbable one. In the use of the temporary tampon we possess an effectual method of combating this. And if it is the vessels of the pia which particularly give trouble, they may be lifted up from their resting places and secured, or one may follow the suggestions of Fluhrer or Nancrede and leave one or more small *serres-fines* in place for a day or two. We must only remember that the cerebral arteries are all terminal.

It has been shown that the brain resembles the kidney in this respect—*i. e.*, that its proper vessels are excentrically directed and run almost perpendicularly to its surface; consequently, if an incision be made in this same relative direction, but few of these will be wounded. It has also been shown that, while oozing from such a wound may be for the moment rather free, it will readily subside after the insertion for a moment of a tampon or sponge.

The danger of hæmorrhage, primary and secondary, will be alluded to again further along.

With regard to brain abscess consequent upon middle-ear disease we have only to add some suggestions as to the best points at which to trephine. According to Bergmann (*l. c.*, p. 801), the best position for application of the instrument is above and behind the ear. Draw a line from the lower border of the orbit to the middle of the external ear, and continue it backward. Four centimetres back from the external auditory meatus erect a perpendicular to this line, and at a point four to five centimetres above the first, on this second line, the middle temporal lobe will be reached, without danger of injuring the posterior branch of the middle meningeal artery—a danger nearly unavoidable if the trephine be applied just above or a little in front of the ear.

Macewen has proposed to make the first perforation through the squamous bone six centimetres above the ear, and then to follow with a second counter-opening on a level with the floor of the abscess, wherever this may be. Numerous cases are on record where death has resulted from failure to make this second opening (Nancrede), although Bergmann considers such through drainage inadvisable, holding that a single opening is sufficient if drainage is favored by position; irrigation, even, in his opinion, being at times injurious.

If abscess in the cerebellum is suspected, important information may be gathered by an incision from the mastoid foramen to the mastoid-occipital fissure. If pus appears here, along the vein or under the periosteum, then it is probable that it has worked its way into the posterior fossæ of the skull and determined an abscess in its contents. For, as Mr. Barker says ("British Medical Journal," December 11, 1886, p. 1155), "if there be inflammation in the posterior aspect of the petrous bone, it can hardly reach the cerebellum without forming a layer of pus under the

dura mater of the lateral sinus." Any extensive operative procedure upon the cerebellum means attacking it below the tentorium. An aspirator needle might be passed into the cerebellum through this membrane from above, but any tumor or abscess which it is proposed to radically attack must be reached from below the tentorium. (*Vide* the remarks above on *Topographical Anatomy*.)

(*To be continued.*)

EFFECTS OF VARYING RATES OF STIMULATION ON THE ACTION OF THE RECURRENT LARYNGEAL NERVES.*

FROM THE PHYSIOLOGICAL LABORATORY OF THE
HARVARD MEDICAL SCHOOL.

BY FRANKLIN H. HOOPER, M. D.,
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IN a preliminary communication on this subject† Professor Henry P. Bowditch and I recorded the fact that the rate of stimulation of the recurrent laryngeal nerves was an important factor in producing an opening or a closing of the glottis. We stated that slow rates of stimulation (18 to 28 induction shocks in a second) with weak currents produced in dogs an opening of the glottis, while with more rapid rates (30 to 40 a second), the same feeble current being used, closing was the result. We also surmised that the reason that other observers had obtained an opening of the glottis with weak currents might be sought in the slow rate of vibration of the interrupters they had employed. We submit the following experiments to substantiate the statements set forth in our former communication. These experiments have been performed in conjunction with Professor Bowditch, and witnessed by many others besides ourselves. Eleven dogs and four cats have been devoted to the investigation. One dog out of this number, under the influence of chloral, failed to exhibit the phenomenon so constant in all the other animals. In this exceptional dog we obtained only closings of the glottis with all rates and all intensities applied to the recurrent nerves. We have recorded in previous papers‡ that in dogs sulphuric ether reverses the normal action of the recurrent nerves; the glottis, under the influence of this drug, dilates instead of closing on stimulation of the recurrenents. In order, therefore, not to be embarrassed by the "ether effect" in our present research upon the effect of varying rates of stimulation, we used chloralized dogs, inasmuch as we had never been able to produce by the methods previously employed a dilatation of the glottis in dogs under the influence of this narcotic. We propose now to describe in detail the apparatus and methods employed in this investigation, and to give a few tables of typical experiments.

* Read before the American Laryngological Association at its tenth annual congress.

† "New York Medical Journal," November 26, 1887.

‡ "The Respiratory Function of the Human Larynx," "New York Medical Journal," July 4, 1885. "The Anatomy and Physiology of the Recurrent Laryngeal Nerves," "New York Medical Journal," July 9, 18, 23, and August 6, 1887.

The interrupter used was constructed by Professor Bowditch on the principle of Bernstein's acoustic current-breaker. Its construction is shown in Fig. 1. It consists of a vibrating-rod, *A*, the length of which is readily altered by pushing it between steel rollers, *B*, which grasp it firmly. The pressure of the rollers upon the spring is regulated by the screw *C*. The spring, mercury-cup, and electro-magnet are

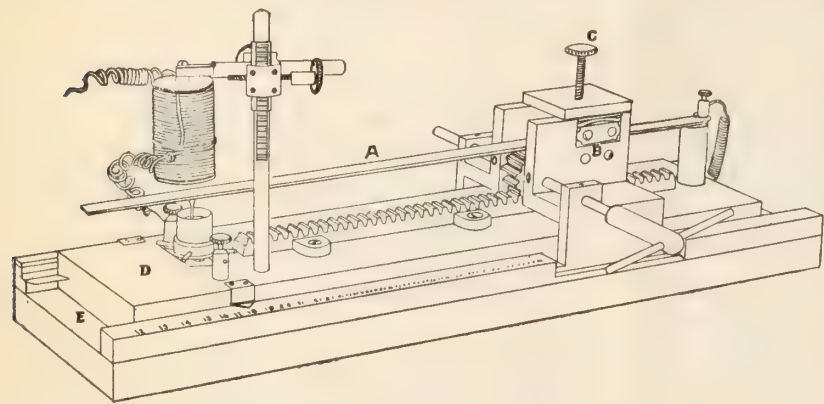


FIG. 1.

supported upon a board, *D*, which is made to slide by a rack and pinion movement upon a second board, *E*, which supports the rollers. A scale graduated empirically upon the board, *E*, indicates, by the position of a pointer, the number of vibrations from 12 to 80 made by the spring in different positions of the apparatus. A second form of interrupter was also employed, which was constructed by Mr. G. W. Fitz, who furnishes the following description of it:

"The interrupter shown in Fig. 2 consists essentially of a steel vibrator (*A*), on which a weight (*B*) slips to regulate the time of vibration. To the weight is attached a cord,

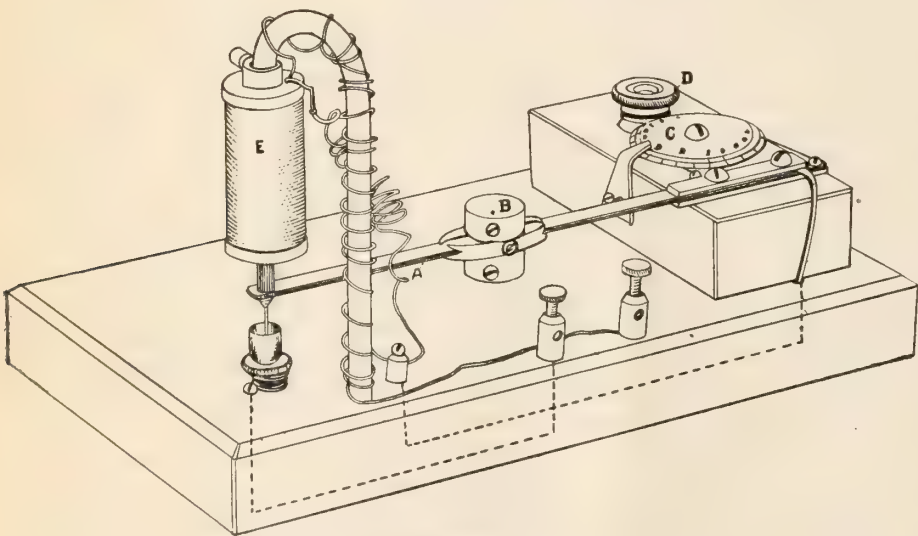


FIG. 2.

which passes over the end of the vibrator and around the index dial (*C*) and setting head (*D*). By turning *D*, the weight might instantly be changed to any point on the vibrator without stopping its motion—the rate being read on the index dial (*C*). The core of the magnet (*E*) is hollow, and the soft iron process from the vibrator plays within, rendering adjustment unnecessary."

The animals were arranged for observation in the manner hitherto described by us in previous papers. Shielded electrodes were placed on both recurrent laryngeal nerves, which were connected with an induction coil, the latter being in communication with the interrupter. By this arrangement the nerves could be stimulated at will with any intensity of current* and with any rate of vibration.

In explanation of the letters used in the following tables, we may say that *O* indicates an opening of the glottis; *OC*, an opening in the posterior portion of the glottis, and a contraction of the ligamentous portion in front, which gives to the glottis a rhomboidal shape—the appearance, in fact, to which we have alluded in previous communications as the "mixed movement"; *C* signifies complete closure of the glottis; *V*, vibrations of the vocal bands.

November 3, 1887.—Mongrel fox terrier dog; medium-sized; eleven months of age; chloralized.

TABLE I.

INTENSITIES.		RATES OF VIBRATION.					
		20	24	28	32	36	40
<i>a</i>	2.....	O	O	O	OC	OC	C
<i>b</i>	3.....	O	O	OC	OC	C	
<i>c</i>	4.....	O	O	OC	OC	C	
<i>d</i>	5.....	O	O	OC	C		
<i>e</i>	6.....	O	O	OC	C		
<i>f</i>	7.....	O	OC	C			
<i>g</i>	8.....	OC	OC	C			
<i>h</i>	10.....	C	C				

It will be seen by the perpendicular column of figures in the above table that the intensity of the stimulation varied from 2 to 10. The horizontal line of figures, indicating the rates of vibration, varied from 20 to 40 in a second. Starting at *a*, with the very feeble irritation of 2, it will be observed that with the rates 20, 24, and 28 opening of the glottis was produced. On increasing the rates to 32 and 36, a contraction of the glottis in front was noticed, the opening behind persisting (mixed movement). With still more rapid rates (40) complete closure took place. In this first trial, then,

with a very weak irritation, opening was effected with rates of vibration as rapid as 28; after this there was a tendency to close, and with a rate of 40 complete clos-

* The intensity of the current is given in arbitrary units, calculated by a method described in a previous paper. "Experimental Researches on the Tension of the Vocal Bands," Trans. of the Amer. Laryngological Assoc., 1883, p. 121.

ure supervened. On increasing the intensity to 3 (*b*) and using the same successive rates of vibration, it will be seen that the tendency to close began with a rate of 28 and complete closure occurred at 36. The third trial (*c*) with an intensity of 4, gave the same results as when an intensity of 3 (*b*) was used. At the fourth trial (*d*), intensity 5, openings took place as with previous rates and intensities, but closing was effected with a rate of 32. It will be observed, therefore, that as the intensity of irritation was increased, closing took place with slower rates of vibration; and finally (*h*), with an intensity of 10, closing was effected with a rate of 20, which at the first trial (*a*), when the intensity was 2, gave complete opening, and in which it was necessary to increase the rates to 40 before closing could be elicited.

November 10, 1887.—Scotch terrier dog; old, blind, and feeble; chloralized.

TABLE II.

Inten- sities.	RATES OF VIBRATION.											
	18	20	22	24	26	28	30	32	34	36	38	40
2.....	V	VO	O	O	O	O	OC	OC	OC	OC	OC	C
3.....	O	O	O	O	O	OC	OC	OC	C			
4.....	O	O	OC	OC	OC	C						
5.....	O	O	OC	OC	OC	C						
6.....	O	O	OC	OC	OC	C						
7.....	O	O	OC	OC	OC	C						
8.....	OC	OC	OC	OC	C							
10....	OC	OC	OC	C								
12....	C											

An analysis of the foregoing table shows that the results do not differ in any marked degree from those of Table I. We note in Table II the vibration of the vocal bands with the weak intensity of 2, and a slow rate of vibration. This vibration of the vocal bands was synchronous with the rate of interruption and was very interesting to watch. On increasing the rate of interruption an opening of the vocal bands was combined with their vibration, yet when a still more rapid rate (22) was used, a pronounced opening was obtained, all vibratory movements of the vocal bands having disappeared.

May 9, 1888.—Spaniel dog; medium sized; one year of age; chloralized.

TABLE III.

INTENSITIES.	RATES OF VIBRATION.									
	18	20	22	24	26	28	30	34	40	
1.....	V	VO	VO	VO	VO	OC	OC	C	C	
2.....	VO	VO	O	O	O	OC	C	C		
3.....	VO	O	O	OC	OC	C				
4.....	O	O	OC	OC	OC	C				
5.....	O	OC	OC	OC	C					
6.....	OC	OC	OC	OC	C					
10....	OC	OC	OC	C						
15....	OC	C	C							
30....	OC	C								

The point of the effect of varying rates is well shown in the foregoing table. A very convincing manner of demonstrating the phenomenon is by using two interrupters, the connections with the induction coil being so arranged that by turning a switch the current can be directed through either of the interrupters. In this way stimulations, con-

sisting of induction shocks of any two desired rates, can be alternately sent through the nerve in rapid succession. In the animal which was the subject of the experiments on May 9th, it was determined that with an intensity of 3, rate 40, a very sharp closure of the glottis was produced, while with the same intensity and a rate of 20 an opening of the glottis was effected. Now, by arranging the two interrupters so that the one vibrated 40 times in a second and the other 20, by simply shifting the switch either of these rates could in an instant be passed through the nerves, and an opening or a closing of the glottis followed according to the rate employed.

TABLE IV.

INTENSITY.	Rate of first interrupter. 20	Rate of second interrupter. 40
	O	C
3.....	O	C

The above-described experiments were performed, as already stated, on chloralized dogs, and seemed to us to be very conclusive. They show that starting with the slowest rate and the feeblest intensity that could produce any noticeable effect, an opening of the glottis was the phenomenon constantly observed. This opening could be converted into a closing by increasing either the rate or the intensity. But the closing was produced much more readily by increasing the rate than by increasing the intensity. The tables show that doubling the rate was sufficient to call forth a distinct closure, while it was necessary to increase the intensity from three to four fold. It is evident, therefore, that the cause of the varying results of nerve stimulation with different rates can not be sought in the amounts of electricity which were thus applied to the nerves.

In previous communications we have fully detailed the "ether-effect" phenomena, and have recorded that sulphuric ether reverses the normal action of the recurrent nerves; the glottis, under the influence of this drug, dilates instead of closing on stimulation of the recurrences; that the "ether-effect" varies according to the susceptibility of the dog, to the amount consumed, and to the intensity of the irritation. Under small doses of ether, stimulation produces closure of the glottis; under large doses, complete dilatation.

The following experiments (Table V) show very clearly both the "ether-effect" and the effects of varying rates of stimulation.

January 19, 1888.—Black-and-tan bitch; about one year of age; tracheotomized. Ether administered through tracheal cannula.*

TABLE V.

INTENSITIES.	RATES OF VIBRATION.					
	18	28	34	40	50	80
0.1.....	O	O	O	O	O	O
2.....	O	O	O	O	O	O
3.....	O	O	O	O	O	O
6.....	O	O	O	O	O	O
10.....	O	O	O	O	O	O
15.....	O	O	O	O	O	O
20.....	O	O	O	O	O	O
30.....	O	O	O	O	O	O

* See cut, "New York Med. Journal," July 23, 1887, p. 100.

It will be seen by the foregoing table that when the animal was profoundly etherized, an opening of the glottis was effected with all intensities and with all rates.

The ether was now removed, and, as its effects were passing off, the nerves were stimulated from time to time with different intensities and with varying rates. The results are given in the following table:

TABLE VI.

HOUR.	Intensities.	RATES OF VIBRATION.			
		18	28	34	40
10.46.....	1 to 30	O	O	O	O
10.48.....	15	OC	OC	C	
10.49.....	2	O	OC	C	
10.50.....	2	O	OC	C	
10.50.....	30	C			
10.52.....	15	C			
10.54.....	2	O			
10.54.....	13	C			

In our paper last year, already referred to, we stated that our experiments on cats showed that the normal action of the recurrent nerves in that animal was to produce an opening of the glottis instead of a closure, as in the dog. We must now modify that statement, as we have proved that with rapid rates of vibration a closure of the glottis may be called forth in cats. It requires, however, nearly double the rate in the cat that is necessary in the dog. As far as our investigations go, they teach us that, as a rule, in the dog, a rate of 40 vibrations in a second is followed by complete closure of the glottis, while in the cat it requires from 70 to 80.

February 16, 1888.—Female cat; chloralized.

TABLE VII.

INTENSITIES.	RATES OF VIBRATION.					
	15	20	30	50	70	80
1.....	O	O	O	O	OC	C
3.....	O	O	O	O	OC	C
10.....	O	O	O	OC	OC	
20.....	O	O	OC	OC	C	
50.....	O	OC	OC	C		

This table may be taken for the type of our experiments on cats. Experiments with the double interrupters were also made in the same manner as described for the dogs. One of the interrupters, being set to vibrate at 80, with a feeble current, gave complete closure, while the other, vibrating at 25, produced opening.

TABLE VIII.

INTENSITY.	Rate of first interrupter. 25	Rate of second interrupter. 80
2.....	O	C

We may summarize our conclusions as follows:

1. It requires a more rapid rate of vibration to produce a closure of the glottis in cats than in dogs.
2. In cats the rate of stimulation necessary to effect a closure must be from 70 to 80 a second; in dogs from 30 to 40.

3. Rates slower than 70 a second produce in cats an opening of the glottis; in dogs, rates slower than 30 produce opening.
4. The intensity of the current influences the effect of varying rates of stimulation.
5. Weak currents with slow rates produce opening.
6. By increasing the rates, the intensity remaining the same, closing results.
7. By increasing the intensity, the rate remaining the same, closing results.
8. Closing is produced more readily by increasing the rate than by increasing the intensity.

A NOTE

ON THE USELESSNESS AND HARMFULNESS OF SHOULDER-STRAPs, SHOULDER-BRACES, AND
HOC GENUS OMNE,
FOR ROUND SHOULDERS, STOOPING,
AND INCIPIENT LATERAL CURVATURE OF THE SPINE.*
By BERNARD ROTH, F. R. C. S.,
LONDON, ENGLAND.

WHEN we find an able surgeon like Mr. Walsham, surgeon in charge of the Orthopædic Department of St. Bartholomew's Hospital, London, not only advocating shoulder-braces, but even inventing a new one, still more injurious than most of its predecessors, because of its greater strength from being manufactured of solid rubber bandage,† one feels inclined to rub one's eyes and to ask whether scientific orthopædic surgery is really advancing or whether we have gone back half a century or more.

John Shaw, that enlightened and able author of a more rational treatment of lateral curvature, whose works I have read again and again with ever-increasing pleasure and profit, criticised shoulder-straps as follows:‡ "The effect which this instrument (shoulder-brace or 'common back-collar') produces in ordinary cases may be easily comprehended. . . . If the scapulæ be brought close to the spine by the straps of the brace and kept constantly so, there can be no use for the several strong muscles which pass from the spine to the scapulæ. They must consequently waste and become nearly useless, while those on the forepart of the chest, being excited to resist the straps, will become increased in power; and hence, when the brace is taken off, not only will the shoulders fall forward as in a delicate person, but the muscles on the forepart of the chest will predominate over those by which the scapulæ should be held back and *pull* the shoulders forward."

This was written upward of sixty years ago, and is so complete and simple a refutation of any supposed efficacy

* Read by title before the American Orthopædic Association at its second annual meeting.
† See "The Lancet," May 3, 1884. "On a New Form of Shoulder-brace for the Treatment of Stooping Habits, Incipient Lateral Curvature, etc."
‡ "Further Observations on the Lateral or Serpentine Curvature of the Spine . . . Being a Supplement to the Work on Distortions of the Spine and Bones of the Chest," London, 1825.

of shoulder-straps for stooping habits that I have little to add to John Shaw's scientific common sense.

I have observed in numerous instances where shoulder-braces have been worn for several months or longer, and where, from misplaced perseverance and severity, they have been worn extra tightly, that the unfortunate wearer has tried to obtain relief from the excessive pressure of the straps over the coracoid process and adjacent clavicle on each side by throwing the whole upper trunk backward by undue arching of the loins, with the result of producing severe lumbar lordosis in addition to the dorsal kyphosis for which the apparatus was being worn. I am quite aware that dorsal kyphosis is generally accompanied by compensatory lumbar lordosis, but in these cases to which I refer the lumbar hollow is much severer than usual and causes an exaggerated thrusting forward and prominence of the abdomen. Of course I am referring to the kyphosis of muscular debility and not to that due to spinal caries. In spite of these facts, ninety-nine out of a hundred medical men of the present day are in the habit not only of allowing, but even of advising patients to wear these instruments of torture. I understand that large fortunes are being made by the sale of those popular American and other shoulder-braces which are so largely advertised at the present time.

The only way in which shoulder-straps might be worn with benefit—not that I ever recommend them—is well illustrated by the following anecdote, which is also culled from good old John Shaw: An eminent surgeon was consulted by a gentleman who became one of our first tragedians as to the best mode of correcting a stoop which he had acquired. The surgeon told him that neither stays nor straps would do him any essential good, and that the only method of succeeding was to recollect to keep his shoulders braced back by a voluntary effort. But the tragedian replied that this he could not do, as his mind was otherwise occupied. The surgeon then told him that he could give him no further assistance. Shortly after this conversation the actor ordered his tailor to make a coat of the finest kerseymere, so as to fit him very tightly when his shoulders were thrown back. Whenever his shoulders fell forward, he was reminded by a pinch under the arms that his coat cost him six guineas and that it was made of very fragile materials; being thus forced, for the sake of his fine coat, to keep his shoulders back, he soon cured himself of the stoop. He then showed himself again to the surgeon, who ever afterward, when consulted whether young ladies should wear shoulder-straps, permitted them, on condition that they were made of fine muslin or valuable silk, for tearing which there should be a forfeit!

I have not referred to the therapeutics of round shoulders, etc., because my articles "Lateral Curvature," "Antero-posterior Curvature," etc., in Heath's "Dictionary of Practical Surgery," will enable any surgeon who follows the lines of treatment there indicated to cure every case of stoop that presents itself in a few weeks, provided he meets with the willing co-operation of the patient.

My pleasure in acceding to Dr. Gibney's request to contribute a paper to this meeting of the National Orthopædic Association of the United States of America will be in-

creased if I am able to convince some of the members present that shoulder-straps and braces are not only useless but also injurious when prescribed for weak backs.

April 9, 1888.

Correspondence.

LETTER FROM LONDON.

Sir Morell Mackenzie's Reply.—The Insurance of the Lives of Infants.—The Medical Schools.—Post-graduate Instruction in London.—Incision of a Gangrenous Lung.

LONDON, October 20, 1888.

THE long-expected reply of Sir Morell Mackenzie has not made nearly so much stir, either in the professional world or among the general public, as was anticipated when its publication was first announced. This is partly due, no doubt, to the length of time that has elapsed since the events referred to occurred, but partly also to the tone of the book itself. It would have been much wiser and certainly far more dignified if Mackenzie had refrained from violent attacks on the German doctors, even if they were entirely in the wrong, and his threat of an action for libel against any one who should dare to publish a translation of the German report is exceedingly undignified, and has done much to prevent any strong feeling in his favor. On the other hand, the suppression of his book in Germany is a very petty and contemptible action for the Government of a great empire to have taken, and altogether the sooner the whole episode is forgotten the better.

The daily papers have opened their columns recently to a correspondence anent the infant insurance clubs, with which it is certainly very easy to find fault. The insurance of infant lives is a custom that prevails to a very large extent in our chief cities; active canvassing agents go about from house to house, and very easily induce parents to insure their children's lives. It is a hard thing to say and a much harder thing to prove, but I have no doubt that many insured children die every year who would not die if they had not been insured, although in any given case of marasmus it is no doubt exceedingly difficult to say that the child would not have died if more care had been taken of it. The "British Medical Journal," in a recent article on this subject, suggested that statistics should be drawn up of the mortality among insured and uninsured infants. If this could be done in regard to infants of the same station in life and subject to the same hygienic and other surroundings, we should certainly be in a position to decide off-hand whether infant insurance was, as has been asserted, a most fertile cause of infant mortality. The remedy that is proposed, and that seems to meet with a good deal of favor, is that no child should be insured under three years of age. I must confess I hope no such enactment will ever be passed. Granting that some children are put to death or allowed to die (which is the same thing) for the sake of the insurance money, still the very large majority of infant deaths own no such cause, and the numbers would not be very much diminished. All the infants would in future have to be buried at the parish expense, which would not only entail an increase in the rates, but encourage parents in not making some endeavor to provide for contingencies in the future. I think that a law forbidding the insurance companies to do more than pay the actual expenses of the funeral, and this not to the parents but directly to the undertaker, would meet all the difficulties and would not be open to any serious objection.

The medical schools are all in full swing now, but it is too

early yet for any reliable information as to the numbers of new entries. If I am correctly informed, however, at least one school will show a considerable falling off in this respect. With the exception of Charing Cross, they all had some manifestation on the opening day, either an introductory address, a conversazione, or a dinner. A public demonstration of some kind is thought to be necessary as an advertisement, but I very much doubt whether these measures are in the least efficacious in attracting new-comers.

The post-graduate lectures have been resumed at Charing Cross, and are, I am told, as well attended as last year; it is not a little surprising that no other school has followed suit, for, seeing the vast number of practitioners in and around London, to say nothing of the occasional visitors, one would think that two or three other classes could be formed without the smallest difficulty. It is quite certain that before long some permanent development of the Charing Cross scheme on a larger basis will have to be made, so as to throw open the unrivaled clinical facilities of some of our special hospitals—not that the practice in them is not already open to professional men, but the instruction at present afforded is not systematized; the physicians and surgeons do what they can for the visitors, but only while seeing their patients, and they are of necessity unable to give the time requisite for a thorough explanation of any individual case. It comes to this, that visitors to any of these hospitals who are anxious to learn will find plenty of opportunity of doing so, but they will have very little chance of being taught.

An interesting case of gangrene of the lung was reported at the first meeting of the Clinical Society by Dr. W. Pasteur. The patient, a boy aged seven, was admitted with a history of acute illness in which he had coughed up some bright blood, and it was said that since then his breath had been very offensive. The physical signs were those of a cavity at the right apex, the rest of the lung being pneumonic. He coughed up from two to four ounces daily of a watery, stinking fluid, mostly saliva. The cavity was incised at the anterior extremity of the second right intercostal space, an inch from the sternum, and large quantities of gangrenous lung and putrid fluid were expelled through the wound. A counter-opening was made in the sixth space, a drainage-tube was put in, and for a week all went well, but the boy then failed rapidly, and died in three days with pericarditis. At the post-mortem the œsophagus was found adherent to the right bronchus, and a sinus communicating was evidently the cause of the gangrene. It was suggested that the child might have swallowed a foreign body, and thus set up the œsophageal trouble. There was a large gangrenous cavity in the apex of the right lung.

Spasmus Nutans in Dentition.—According to the “Lancet,” “Dr. E. Tordens’s out-patient class in Brussels has been afforded the opportunity of seeing a case of spasmus nutans, or *tic de salaam*. This is not a very common affection, but several examples are mentioned by Henoch in his ‘Lectures on Children’s Diseases.’ The Brussels case was that of a little girl of ten months, still at the breast. She had been very healthy, and was fairly robust. A month previously to her admission the mother had noticed a slight but nearly constant nodding motion of the head. When examined for the first time the chief motion was rotatory; the eyes also rolled from side to side, especially when the head was held. There were two teeth. The child was treated with oxide of zinc and bromide of potassium. The next time the patient was brought, a fortnight later, but little improvement could be detected, and a nodding motion was added to the lateral oscillation. Afterward, however, improvement commenced, and at the end of six weeks from the first visit the child was quite well. By that time she had cut two new teeth. There could be little doubt that the affection was a complication, though a rare one, of dentition.”

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & CO.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 3, 1888.

EXOPHTHALMIC GOÎTRE.

THIS mysterious malady presents all the attraction common to unexplained phenomena. The mechanism of the symptoms and the nature of the disorder are as yet among the things not found out. A disease capable of producing such remarkable nervous complications as existed in a case cited by Bristowe (“Brain,” No. 31) is, to say the least, sufficiently interesting. The symptoms of exophthalmic goître were followed by almost complete external ophthalmoplegia, and this by complete right hemianæsthesia (including the special senses), epileptic attacks, paralysis with rigidity of the right side, hæmorrhages from the ears, and persistent pyrexia. The origin of these various manifestations remained unsolved at the post-mortem, for there was no discoverable lesion of the nervous system.

The sympathetic has been accused of causing the peculiar conditions common to Graves’s, or Basedow’s, disease; but of late there is a decided tendency to exonerate in part that much abused and not too well understood portion of the nervous machinery. The pneumogastric—an interesting and decidedly mixed nerve—seems responsible for a few of the queer things that happen. The central nervous system appears also to take part in them, and must eventually plead guilty, thus producing a mass of testimony from which we may reasonably expect something rich at the cross-examination. But we are not there yet. At present the clerks medical are taking down testimony with assiduity and breathless diligence, lest some discovery should escape the one who runs and reads wisely, and another name for this remarkable disorder be thus forever lost to a rewardful and benevolent posterity.

The cardiac disturbance is the essential feature of the disease, a high pulse-rate maintained even in repose always suggesting it. The other classic symptoms may or may not be present. Hence the inexactness and injustice of our present system of cognominal nomenclature. But what’s in a name? The trouble is just as hard to bear, whether it afflicts as Graves’s disease, or Basedow’s disease, or exophthalmic goître, and is equally perplexing in any guise. The heart goes pitty-pat, like that of the girl in the comic song, but far too often. There is nothing the matter with it as a heart. Its controlling centers have all gone wrong—just as the noblemen did who became pirates off the coast of Penzance. Now, where are the controlling nerve centers, especially those that govern the relation existing between blood-pressure and the frequency of the heart’s action? In the sympathetic? Down with thine anatomy from its dusty shelf—or, better still, seize thy bulky Gowers and read the sibylline leaves consolidated on page 1211: “The sympathetic functions are under central control, and the char-

acter of the symptoms is in harmony with the physiological relation between the degree of blood-pressure and the frequency of the heart's action. The chief controlling centers, especially those that determine this relation, are in the region of the medulla oblongata." To this region Filehne in particular has turned his attention, endeavoring by experiment to elicit information concerning which pathological anatomy remains obstinately silent. He divided the anterior fourth of the restiform bodies, producing exophthalmia in one case, enlargement also of the thyroid in another, and the three classic symptoms in a third. The negative evidence of pathological anatomy and the positive evidence of the symptoms themselves (Gowers) alike suggest that the malady is a neurosis, a disease of the nerve elements proper, having its character determined by their functional relations, and its origin beyond the present range of medical vision. Possibly chemistry may one day throw light on this subject, and reveal to expectant science the exact element in the blood—gas or other toxic agent—capable of producing such marked alteration in functional nerve activity without appreciable change in nerve structure.

With judicial brevity and fairness the "Journal de médecine" for August 26th reviews the present best known methods of treatment. First, there is hygienic treatment, pure and simple; a quiet life in the country, freedom from emotional strain, a milk diet when the heart is not enfeebled, and an abundant ordinary diet when it is, with the addition of coffee and wine. The two methods of medical treatment most in vogue are that of Jaccoud and that of Friedreich. The first consists in the administration of arsenious acid and bromide of potassium. Night and morning, minute doses of arsenious acid are given, and between meals from half a drachm to a drachm of bromide of potassium. This alone is used by Jaccoud in mild cases. Friedreich's method is essentially different; no bromide, no arsenic, but quinine—quinine for an indefinite period. Certain drugs are absolutely contra-indicated. These are the iodides of potassium and sodium, which augment the respiratory difficulty resulting from increased frequency of the heart's action. Digitalis is sometimes useful, sometimes not. When quickened heart-beats are due to loss of cardiac contractility, digitalis is of value in slowing the rapid systole that follows enfeeblement of the myocardium. But when the heart is overexcited without being weakened, digitalis, by strengthening the force of its contractions, must inevitably do harm. Electricity also shows good results, employed in two ways quite distinct. One is the method of Eulenburg and Guttmann, which consists in faradization of the sympathetic, one electrode being applied to the region of the sympathetic in the neck, and the other to the cervical vertebræ. The second mode of electrical treatment is that of Charcot and Vigouroux, who apply galvanism to the precordial region. Hydrotherapy also merits recognition as a valuable adjuvant, though inadmissible in all cases where there is any lesion of the heart or lungs. Sea-bathing, the wet pack, and the needle bath have all been of great benefit. Cheerful companionship and congenial surroundings are advocated by the followers of each and every "method."

If the statements recently made at the Academy of Medicine in regard to hypnotism are just—that it equalizes the circulation and regulates the action of nerve force—then the wizard remedy of France has magnificent possibilities in this peculiar and untried field. From the hypnotic sleep and hypnotic suggestion yet another and novel method may arise. According to the "Lancet," Stiller, of Buda Pesth, obtains remarkable results by sending patients to altitudes varying from 1,500 to 5,000 feet, in the Tyrol and among the Carpathian mountains. Compression of the thyroid, gradually and systematically increased, has been known to bring about marked diminution of all the symptoms. Sometimes the disease disappears spontaneously, a fact that has probably again and again given reputé to some drug or therapeutic agent quite innocent of the cure.

Marriage, pregnancy, and the other duties incident to the maternal state, have caused this disease to vanish forever. Is there any clew here? Has the hygiene of reflex action nothing to do with the case? Health is best secured by the exercise and co-ordination of large numbers of reflex arcs in widely separated parts of the body, and the development and use of associated reflexes is a practical means of modifying nerve-center function. Re-enforcing or inhibiting impressions sent into appropriate areas by the application or removal of particular stimuli affects an advantageous redistribution of nervous energy. The maternal state equalizes the circulation and regulates the action of nerve force. In other words, it calls into normal activity weak, depraved, or overacting cells, and sacrifices all their pet peculiarities to the work of constructing a new creature. This profound impression of law and order remains indefinitely, perhaps forever, and the functional nervous trouble is deprived of *raison d'être*. Treatment with this end in view—to equalize the circulation and regulate nerve force—is certainly based upon a rational premise, whether the result is obtained by means of the wet pack, hypnotism, electricity, or the use of drugs, or through the power of certain agencies as yet only among the possibles.

IS THERE SUCH A DISEASE AS ACRODYNIA?

SOME months ago we gave a short account of the occurrence of arsenical poisoning in a number of persons in Hyères, in France, caused by their drinking wine that had been adulterated with arsenious acid. In the cases that first came under the observation of the physicians of Hyères, the diagnosis of acrodynia was made. In a communication subsequently made to the *Académie de médecine*, by Dr. Vidal, of Hyères, a summary of which is given in the "Union médicale," that gentleman briefly recounted the symptoms observed in some of the cases. As an example, a railway employee, a man of sobriety, living at home, was taken, apart from any known cause, with gastric uneasiness without fever. An emetic caused immediate amelioration, but diarrhœa soon appeared, which was efficiently combated with bismuth. Then other symptoms became predominant; patches of urticaria were developed, with insupportable itching, and between them there were red spots look-

ing like the exanthem of measles. At the same time there was intense fever. The mouth, the larynx, and the bronchi were invaded by the rash, which was succeeded by attacks of dyspnoea, and by mucous râles limited to the larger tubes; there was also coryza with persistent lacrymation. Desquamation took place, the diarrhoea and loss of appetite continuing, and soon new symptoms were shown that led M. Vidal to the diagnosis of acrodynia. Chief among them were numbness, especially of the lower limbs; tingling and disturbances of the sense of touch; loss of tactile sensibility in the feet, with cutaneous hyperæsthesia at times; contractures, spasms, and tremors, especially in the lower limbs; and a difficulty of locomotion that rendered the gait stumbling. In one case there was transitory glycosuria. M. Vidal lays stress on the swelling of the extremities of the limbs, which were bulkier than normal and infiltrated, but free from œdema properly so called. Besides the cutaneous lesions already mentioned, he observed brown patches on the penis, the abdomen, and the scrotum. The desquamation was very abundant, and in the parts where it was most so the tactile sensibility was decidedly diminished.

It must be admitted that in a general way these phenomena do not differ materially from those that are said to characterize acrodynia, a disease that prevailed epidemically in France so recently as sixty years ago; and M. Vidal asks if many of the epidemics so entitled, perhaps all of them, may not have been provoked by the presence of small quantities of arsenical salts in articles of food. This is not the first time that so-called acrodynia has been suspected to be due to poisoning; but it is not arsenic alone that has been supposed to give rise to the phenomena—their similarity to those of ergotism has been pointed out. At present it is probably impossible to answer M. Vidal's question positively, but the facts that he has reported, especially when coupled with what has been said about the features of poisoning with ergot, may well lead to doubt as to the essential or specific nature of acrodynia.

GUM-CHEWING.

THE sight of one or more young persons given over to the somewhat obtrusive chewing of gum is not of the most agreeable. Moreover, the habit has been held to stimulate grown-up women to congregate together for indulgence in scandal. It is not to be wondered at, therefore, that the light wits of the period are fond of inveighing against it after their manner. It is possible, nevertheless, that the chewing of gum, provided care is taken not to indulge in its performance gregariously, is not wholly reprehensible; indeed, it may even be advantageous under certain circumstances. We do not refer, of course, to the factitious products found in the confectioners' shops. Some of the latter, however, may be innocent enough, especially those that have balsam of Tolu as the fundamental ingredient; of those made with paraffin the less said the better. We have in mind the genuine, unadulterated exudation from the hemlock spruce of northern New England and Canada, the *Abies canadensis*, as the school-boy of those regions gathers it by

climbing the trees or in illicit and perilous visits to the "jams" of timber that form when the trunks of these stately trees are floated down the rivers in the spring.

Not long ago a distinguished physician from one of the Gulf States, being in New York in attendance at a meeting of one of the special societies, was observed to take a piece of chewing-gum from his pocket and proceed to chew a portion of it. Perceiving that some of the gentlemen seated near him felt interested in this little procedure, he remarked that he thought it improved his digestion. There seems to be some *a priori* reason for supposing that it may have such an effect. It certainly increases the salivary secretion, and, used at the proper time, it may assist materially in the digestion of amylaceous food by that very fact, besides acting as a gentle stimulant to the stomach by reason of some of its aromatic principles being swallowed with the saliva. It undoubtedly cleanses the teeth very effectually, and it is reasonable to suppose that it may exert a wholesome influence upon the pharynx in catarrhal conditions, perhaps even contributing appreciably to guard the throat against the attacks of morbid germs. On the whole, then, although on presumptive grounds alone, we must set it down as our impression that the chewing of spruce gum is in some respects to be commended.

MINOR PARAGRAPHS.

SPONTANEOUS BACTERIOTHERAPY.

THE occasional cure of a local affection by an attack of erysipelas is a matter of common observation, and the occurrence is not necessarily to be explained as the triumph of one micro-organism over another. In a recent number of the "Giornale internazionale delle scienze mediche," however, Dr. de Biase gives examples in which erysipelas was followed by the subsidence of a systemic disease. He reports three cases of malarial disease that were perfectly cured by an attack of facial erysipelas. Not only did the febrile paroxysms cease, but the phenomena of chronic malarial poisoning disappeared rapidly "after the erysipelas cocci had got the better of the malarial micro-organism."

UTERINE COUGH.

A CONTRIBUTOR to the "Deutsche medicinische Wochenschrift" reports the case of a woman, thirty-five years old, who, when four months advanced in her third pregnancy, was attacked with tickling in the throat and hoarseness after taking cold. According to a summary given in the "Centralblatt für klinische Medicin," the usual catarrhal appearances vanished in a fortnight, but an exceedingly tormenting dry, rough cough remained, excited by an almost inexpressible tickling in the larynx. No cause for the cough could be discovered on physical examination of the chest and the larynx, but a large erosion of the cervix uteri was found, together with two small mucous polypi in the cervical canal. The polypi were removed and the cervical canal was penciled with tincture of iodine, and within a few hours the cough ceased. The author thinks that the predisposing cause of this reflex cough was general debility due to pregnancy and leucorrhœa, and that its exciting cause was the polypi, while the occasion of the conveyance of the irritation to the cough center was a previous heightening of its sensitiveness by the laryngeal and tracheal inflammation.

COCCYGODYNIA IN THE MALE.

It was a gynecologist, the late Dr. J. C. Nott, who first called attention to the subject of neuralgia of the coccyx, and another gynecologist, Sir James Y. Simpson, gave it the name of coccygodynia. If it has not heretofore been supposed to be confined exclusively to women, its preponderating occurrence in them has been so marked that it has received special consideration in text-books of gynecology. If, however, as Dr. Emmet maintains, it is but a symptom of deep-seated trouble within the pelvis, its occasional occurrence in men is to be expected, for pelvic affections are sometimes found in them that are perfectly competent to its production. This seems to have been true of two men whose cases are made the text of an article in the "Centralblatt für klinische Medicin," by Dr. Alexander Peyer. One of them had for years been the subject of vesical symptoms, and the other was the victim of sexual neurasthenia. In each case it would be instructive to know the precise physical state of the pelvic contents. Dr. Peyer plainly states his belief in the reflex nature of the affection and his preference for treating it indirectly, by attacking the genital apparatus, rather than by removal of the coccyx.

A DANGER FROM PERITONEAL IRRIGATION.

At a recent meeting of the Paris Obstetrical and Gynecological Society, Dr. Polaillon presented the case of a woman who had died on the table after the performance of ovariectomy. As there had been free hæmorrhage from severed omental and pelvic adhesions, the peritonæum was irrigated with about three pints of a one-per-cent. solution of carbolic acid in boiled distilled water of a temperature of about 98.6° F. The process occupied between two and three minutes, at the end of which time the breathing suddenly became accelerated. It then grew feeble and ceased, the face becoming violaceous, but the heart continued to beat regularly. Artificial respiration, tracheotomy, oxygen by inhalation, applications of the actual cautery to the thorax, frictions, hypodermic injections of ether, electrization of the diaphragm, and an attempt to let blood from the arm, all proved unavailing; after two hours spent in their employment, the woman was indisputably dead. M. Polaillon referred to other instances in which irrigation of the peritonæum had produced such an embarrassment of the respiration that great difficulty had been met with in resuscitating the patients, and like occurrences were alluded to by M. Guérin. Polaillon suggests that these untoward effects are produced by the action of the hot water as such upon the lower surface of the diaphragm and upon the solar plexus. The author of the account given in "Lyon médical," however, seems to think that M. Polaillon's patient died rather from the poisonous effect of carbolic acid than from a reflex inhibition of respiration.

LEGISLATIVE REGULATION OF THE PRACTICE OF MEDICINE.

A LAWYER, Mr. W. A. Purrington, of New York, read a notable paper at the recent meeting of the American Social Science Association, entitled "How far can Legislation Aid in Maintaining a Proper Standard of Medical Education?" The paper has been published in the form of a pamphlet, and, like all that emanates from its author, it is bright, suggestive, and utterly free from involved argument. It deals only with propositions that are undeniable when once they are understood in their bearings upon the rights of the citizen—bearings which Mr. Purrington is particularly clever in setting forth clearly. He shows the inadequacy of the New York laws, and even how,

on more than one occasion, a gubernatorial veto has been required to undo unlawful legislation in the interest of objectionable medical colleges. In place of many laws with respect to various points of contact between the medical profession and the community, we need, he says, a general law dealing with them all; and such a law we shall have, he thinks, when the so-called therapeutical "schools" cease their bickering and when a professional status is accorded to the pharmacist and the dentist. Meantime, he bears testimony to the efficient work done by the Medical Society of the County of New York in the suppression of gross quackery under an inadequate law.

ITEMS, ETC.

The Washington Obstetrical and Gynecological Society.—At the annual meeting, held on Friday, October 19th, officers for the ensuing year were elected as follows: President, Dr. Joseph Taber Johnson; vice-presidents, Dr. D. Webster Prentiss and Dr. W. W. Johnston; treasurer, Dr. George B. Harrison; recording secretary, Dr. Samuel S. Adams; corresponding secretary, Dr. G. Wythe Cook.

The Boston Children's Hospital.—A new building devoted to out-patients was opened last week.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 21 to October 27, 1888:*

FORWOOD, WILLIAM H., Major and Surgeon, Fort Snelling, Minn., is granted leave of absence for one month on surgeon's certificate of disability. S. O. 100, Headquarters Department of Dakota, St. Paul, Minn., October 20, 1888.

WOLVERTON, WILLIAM D., Major and Surgeon, is relieved from duty at Fort D. A. Russell, Wyoming Territory, and will report in person to the commanding officer, Fort Douglas, Utah Territory, for duty at that post. Par. 16, S. O. 248, Headquarters of the Army, A. G. O., Washington, October 24, 1888.

WILLIAMS, JOHN W., Major and Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. 209, October 4, 1888, Division of the Atlantic, is extended one month. Par. 14, S. O. 246, A. G. O., October 22, 1888.

CARTER, EDWARD C., Captain and Assistant Surgeon. By direction of the Secretary of War, leave of absence is granted for one month, to take effect on the completion of his present duties. Par. 13, S. O. 246, A. G. O., October 22, 1888.

BARTHOLOMEW, JOHN H., Major and Surgeon (Fort McIntosh, Texas), is granted leave of absence for one month on surgeon's certificate of disability. Headquarters Department of Texas, San Antonio, Texas, October 10, 1888.

BROWN, PAUL R., Captain and Assistant Surgeon, is relieved from duty at Fort Sidney, Nebraska, and will report in person to the commanding officer, Fort D. A. Russell, Wyoming Territory, for duty at that post. Par. 16, S. O. 248, Headquarters of the Army, A. G. O., Washington, October 24, 1888.

BORDEN, WILLIAM C., First Lieutenant and Assistant Surgeon, by direction of the Secretary of War, is relieved from duty at San Antonio, Texas, and will report in person to the commanding officer, Fort Ringgold, Texas, for duty at that post. Par. 11, S. O. 247, A. G. O., Washington, October 23, 1888.

BALL, R. R., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. Par. 8, S. O. 129, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, October 18, 1888.

Promotion.

LORING, LEONARD Y., Captain and Assistant Surgeon, to be Surgeon, with the rank of Major, October 9, 1888, *vice* Meacham, deceased.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending October 20, 1888:*

ARMSTRONG, S. T., Passed Assistant Surgeon. Granted leave of absence for sixteen days. October 17, 1888.

WOODWARD, R. M., Assistant Surgeon. When relieved at Marine Hospital, Boston, Mass., to proceed to Marine Hospital, Chicago, Ill., for duty. October 12, 1888. Granted leave of absence for thirty days. October 17, 1888.

CONDICT, A. W., Assistant Surgeon. Relieved from duty at Marine Hospital, Chicago, Ill., and ordered to Marine Hospital, Boston, Mass. October 12, 1888.

Society Meetings for the Coming Week:

MONDAY, November 5th: New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, November 6th: New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg Medical Association; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association; Hampden, Mass., District Medical Society (Springfield); Baltimore Academy of Medicine.

WEDNESDAY, November 7th: Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

THURSDAY, November 8th: Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Physicians' Mutual Aid Association (annual); Medical Society of the County of Cayuga, N. Y.; Pathological Society of Philadelphia.

FRIDAY, November 9th: New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

SATURDAY, November 10th: Obstetrical Society of Boston (private).

OBITUARY NOTES.

James Crane, M. D., of Brooklyn, died on Wednesday, October 31st, in the seventy-first year of his age. He was born in Newark, N. J., and was graduated from the Jefferson Medical College in 1839. After practicing in New York city a few years he settled in Brooklyn in 1845. In 1847 he was appointed attending physician to the Brooklyn City Hospital, which position he retained until 1877. In June, 1877, he was appointed president of the Brooklyn Board of Health, in which position he rendered efficient services. He was a member of the Medical Society of the County of Kings and of the Brooklyn Medical and Surgical Society. His death was due to congestive apoplexy, after an illness of four years' duration.

Letters to the Editor.

THE ANTISEPTIC FORCEPS LOCK.

LOUISVILLE, KY., October 8, 1888.

To the Editor of the New York Medical Journal:

SIR: In your issue for August 25th, in describing a uterine dilator, I mentioned that it had been much improved, as now manufactured by the Messrs. Tiemann & Co., by the addition of a modified "French lock." I did not claim the lock or *any* part of it as my invention, but supposed it was devised by the Messrs. Tiemann & Co., as I had then seen no description of a similar lock in any medical publication. In your September 22d issue I see a letter from Dr. Charles N. Dixon Jones, from which I extract the following:

"If Dr. Wathen will turn to the 'New York Medical Journal' for March 24th, page 532, he will find therein described, under the title of 'A New Antiseptic Lock for Scissors and Forceps,' a lock which I had made by Messrs. Tiemann & Co., and which is identical with the one he makes use of without taking the trouble to acknowledge its authorship."

I have turned to page 532 and find the following: "In order to overcome these difficulties, with the aid of Messrs. Tiemann & Co., I have constructed a lock after the following pattern." In view of the foregoing, is it possible that I have done Dr. Jones an irreparable injustice? I never claimed the lock as my own, nor did he *originally* claim more than a *part* interest in its "authorship." But I beg to call the attention of Dr. Jones to the "Illustrirte Monatsschrift der ärztlichen Polytechnik," in which he may find a description of a lock of which his is only a *slight modification*. This lock is patented in Germany (patent No. 40,642), and the punctilious Dr. Jones used it "without taking the trouble to acknowledge its authorship."

Respectfully,

W. H. WATHEN.

Proceedings of Societies.

AMERICAN ORTHOPÆDIC ASSOCIATION.

Second Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, Dr. NEWTON M. SHAFFER, of New York, in the Chair.

The Treatment of Club-foot by means of the Thomas Wrench, or "T. T."—Dr. V. P. GIBNEY, of New York, read a paper on this subject. (It will be published hereafter.)

Morton's Operation for the Immediate Reduction of Club-foot.—Dr. H. HODGEN, of St. Louis, read a paper on this subject. (It will be published hereafter.)

A Practical Point in the Treatment of Pott's Disease of the Spine.—Dr. A. B. JUDSON, of New York, read a paper on this subject. (See page 323.)

Analysis of Treatment of Seventy Cases of Club-foot.—In this paper Dr. E. H. BRADFORD, of Boston, said that the treatment necessarily required:

1. The rectification of the misplaced bones.

2. The retention in a normal position until the abnormal facet of the astragalus became normal under the presence of a new position.

The first of these could be done by mechanical means, stretching or tearing the ligaments, tendons, and forcing the foot into shape. It might be done gradually or forcibly. The second was a mechanical problem, and the retentive appliance

should be worn for a long or short time, according to the size of the distorted bone. The following questions in regard to treatment were at present unsettled: *a.* In what cases was it advisable to correct and treat by mechanical means alone without the aid of any operative interference, even tenotomy? *b.* When was tenotomy advisable? *c.* Could severe cases be entirely corrected and permanently cured without tarsal resection? *d.* Was tarsal resection or osteotomy a justifiable operation?

His conclusions were: 1. That the cases of infantile club-foot could, as a rule, be thoroughly and efficiently treated without tenotomy by mechanical correction and mechanical retention alone. 2. That in older patients tenotomy aided the correction, and was not injurious in the permanent result. 3. That resistant cases of the severest type could be corrected without tarsal osteotomy. 4. That in some cases of resistant club-foot tarsal osteotomy was needed for perfect rectification, and not only was justifiable, but might be indicated in exceptional instances.

Reflex Valgus.—The history of a case was reported by Dr. G. W. RYAN, of Cincinnati.

Observations on Seventy-five Cases of Flat-foot, with Particular Reference to Treatment.—Dr. ROYAL WHITMAN, of Boston, read a paper with this title in which he said that, clinically, flat-foot was an affection which, in the majority of cases, occurred independent of local or constitutional disease. The direct cause was overweight or overwork for feet subjected to mechanical disadvantages. These were (1) the common habit of turning on the toes in standing or walking, an attitude which produced an increased and continual strain on the weakest part of the foot. (2) Weakness of muscles from disease and deformities caused by improper shoes. Flat-foot, being essentially a dislocation, should be treated like other dislocations, by reposition and retention in normal position until, by exercise and avoidance of faulty position, the muscles might regain their normal strength. In ordinary cases such retention could only be accomplished by some form of mechanical support. A brace should be constructed on principles somewhat as follows: It should be inelastic, light, and comfortable; it should fit the foot perfectly, and not interfere with its normal movements or the action of its muscles. A steel brace designed on these principles was shown. The paper was illustrated by casts and diagrams.

Dr. JOHN RIDLON, of New York, exhibited a wrench which he used for the same purpose as that exhibited by Dr. Gibney, being modified from a "Utility" wrench. It differed from Thomas's wrench and Gibney's modification of Thomas's in that the grip was taken by sliding the lower grip-bar toward the upper simply by manual pressure. When in position it was held by a cog-and-spring arrangement which could instantly be released by pressing a trigger. The grip-bars were straight instead of curving toward each other, as in the Gibney instrument. This was an advantage when the instrument was used as an osteoclast in cases of badly united Colles's fracture of the radius. As an instrument for cases of club-foot the author did not think it had any special advantage over Thomas's wrench.

Femoral Osteotomy for the Correction of Deformity resulting from Hip-joint Disease.—Dr. AP MORGAN VANCE, of Louisville, read a clinical report of eight cases. (It will be published hereafter.)

The PRESIDENT exhibited Colin's osteoclast.

Senile Coxitis.—Dr. HENRY L. TAYLOR, of New York, read a paper on this subject. (It will be published hereafter.)

Hæmatoma Auris as a Sign of Injury to the Spine in the Superior Cervical Region.—Dr. BENJAMIN LEE, of Philadelphia, read a paper on this subject. His conclusions were: 1. That this pathological condition was idiopathic, never traumatic. He would not deny the existence of such a condition. It had a

facies and history of its own. The same amount of violence would probably produce an extravasation of blood in the tissues of the ear in an insane person, but that would not be the "insane ear." 2. That the local tissue change which made an extravasation possible was dependent upon a degenerative alteration in the nerve center which controlled the circulatory apparatus of the auricle, involving, or not, the larger arterial branches.

Osteotomy for Anterior Tibial Curves was the title of a paper by Dr. DE FORREST WILLARD, of Philadelphia, who said that rickets, although a constitutional disease, dependent upon malassimilation and malnutrition, yet exhibited its worst phases in deformities of the bones. These deformities were due to the relative preponderance of organic tissues in the bones and the failure of the formative cartilage cells to produce true osseous cells. During this stage of softening many portions of the skeleton became distorted, and when earthy salts were again deposited sclerosis resulted and the faulty portions were permanently fixed. Anterior tibial curves were among the most frequent of these distortions. He presented the following rules for treatment: 1. Manual straightening and the employment of suitable apparatus. This might be successful in young children with the bones still springy, but in all other cases it would utterly fail, and time and money would be wasted. Braces were useful in laterally bowed legs, but not in anterior curves. 2. Forcible fracture—*a.* manual; *b.* instrumental. *a.* Manual fracture: A strong surgeon could usually break the bones of a child under three years of age, especially if the knee was brought into use as a fulcrum, but the point of fracture was uncertain. The result was a simple fracture. *b.* Osteoclasis: The osteoclast applied to the thigh was a definite and comparatively certain and exact instrument in determining the point of fracture, but in the leg the sharp tibial edge rendered the employment of much force a dangerous procedure as regarded the life of the soft parts. 3. Osteotomy—*a.* simple; *b.* cuneiform. *a.* Simple section of the bone with the osteotome, although it produced a compound fracture, was, practically, almost subcutaneous, and if done with thorough asepsis was rarely followed by suppuration. It was applicable to all except the very worst cases of deformity, since even sharp angles of bone were speedily inclosed in the callus. Suturing of the divided bone was rarely necessary. *b.* Wedge-shaped osteotomy was applicable to severer grades of deformity. This operation was much more likely to be followed by suppuration, but with strict asepsis such an accident was rare. Plaster of Paris furnished the most convenient form of after-splint. Osteotomy offered the simplest, surest, and most satisfactory results in anterior tibial curves.

Two Knee-joint Excisions.—Dr. A. J. STEELE, of St. Louis, read a paper in which he said that in these cases he had done excision of the knee, the first in a lad with chronic fungous and suppurative joint disease which had been going on from early childhood. The second in a young woman with right-angled ankylosis, of nine years' standing, resulting from injury and doubtless subsequent acute synovitis. In the first case the joint was rapidly going on to destruction and the constitution breaking down; in the second the inconvenience in walking prompted measures for relief.

It was hoped arthrectomy alone might afford the required relief in Case I, but on exposing the joint the serious bone involvement prompted its removal. Antisepsis was used, all diseased tissue was removed, including the patella, the bones were pinned together with steel nails, and permanent dressings were applied. Subsequent oozing caused a change of dressing to a bracketed plaster-of-Paris splint, with suspension. Union was rapid and constitutional improvement prompt. At the present

time, three months since the operation, the boy was in robust health and about on crutches, wound healed, bones firm, and limb straight. The removed eroded bones, the pins used, and photograph of limb were shown.

In Case II strict antisepsis was not observed. The joint was removed *en bloc*, the limb straightened, and the bones doweled together with four needles, the ordinary crochet; a bracketed wire splint was applied, and the limb suspended; no untoward symptoms occurred, and little or no pus formed. One bone pin was removed about the fourth week; the other one broke off in the bone. It was expected that this piece left in would soften and be absorbed. For a time it seemed to cause no irritation, but after three months it caused suppuration, came to the surface, and was picked out, being quite eroded. At the present time, eight months since the operation, the patient was walking, usually without even the assistance of a cane, on a three-inch patten, and with scarcely a limp.

It was first supposed that bony union of the patella to the outer condyle had occurred, but subsequent boiling of the specimen showed it to be only very firmly fibrous. Being unresisted by the tibia for nine years, the condyles had grown downward, elongated, presenting with the shortened ligaments an inseparable barrier to straightening without operation. The removed joint, the eroded bone pins, and a photograph of the present useful limb were exhibited, with analytical remarks of the cases and conclusions.

Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries, with Special Reference to the Hip, Knee, and Elbow Joints, with Illustrative Cases.—Dr. W. R. WHITEHEAD, of Denver, Colorado, read a paper with this title.

The Treatment of Hip-joint Disease by Fixation and Extension, with the Exhibition of a New Splint.—Dr. R. W. LOVETT, of Boston, read the paper. He said that American traction splints were criticised by English surgeons on the ground that they afforded imperfect fixation. With a view of determining how much fixation traction alone afforded, some experiments had been made upon a healthy child. It was found that with four pounds traction, exerted by means of a hip splint with one perineal band, in walking, 35° of motion at the hip joint took place. With the highest endurable traction (eight pounds), 15° of motion took place. Evidently traction alone could not afford fixation to a diseased joint. It did not seem likely either that it separated the joint surfaces, inasmuch as in the case experimented on the power of the thigh muscles was roughly estimated to be thirty-six pounds. With all this force, when set in muscular spasm, they would pull the head of the bone against the acetabulum with more than that power, and the antagonizing force was only eight pounds at most. Experiments as to distraction upon the cadaver did not reproduce the clinical conditions, inasmuch as muscular spasm, the most important factor of all, was left out of account.

A hip splint providing fixation as well as traction was shown, being merely a slightly modified combination of the English Thomas splint with the American traction splint. Its best use was in bad cases where any joint motion did harm, and in cases where deformity was present, inasmuch as it was possible to correct the deformity while the child went about on crutches.

Lateral Curvature and its Early Treatment.—Dr. SAMUEL KETCH, of New York, read a paper on this subject.

Officers for the Ensuing Year were elected as follows: President, Dr. E. H. Bradford, of Boston; vice-presidents, Dr. Benjamin Lee, of Philadelphia; and Dr. V. P. Gibney, of New York; secretary and treasurer, Dr. R. W. Lovett, of Boston. It was voted to hold the next meeting in Boston, in September, 1889.

AMERICAN NEUROLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, Dr. JAMES J. PUTNAM, of Boston, in the Chair.

THE meeting was opened with an address by the president.

Nervous Affections following Injury (Concussion of the Spine; "Railway Spine" and "Railway Brain").—A paper with this title was read by Dr. PHILIP C. KNAPP, of Boston, who said that, excluding the well-known organic lesions, there remained a symptom-complex, consisting of pain in the head, vertigo, irritability and depression, mental impairment, convulsive seizures, muscular weakness or paralysis, muscular wasting, alterations of the knee-jerk, diplopia, nystagmus, and anæsthesia. He referred to the fact that trauma might give rise to a neurasthenia which would present hysterical symptoms. True hysteria was seldom found. The prognosis was grave. Improvement was not uncommon, but recovery was rare.

Dr. E. C. SEGUIN, of New York, referred to the difficulty of diagnosis. As elements of error he mentioned uncertainty or involuntary deception on the part of the patient, who ascribed to his injury symptoms which he had had before the accident. To these were to be added intentional deception and auto-suggestion. In regard to the hysterical element, he referred to a paper written in 1875, in which he had shown the frequent coexistence of hysterical symptoms with organic disease of the brain and cord. This combination was not peculiar to traumatism, but was found also in morphinism and after moral shock.

Dr. L. C. GRAY, of New York, alluded further to the influence of suggestion. The psychical lesion was so large as to make the majority of cases undiagnosticable.

Dr. ZENNER, of Cincinnati, referred to hysterical symptoms conjoined with organic disease, alluding to a case of lead poisoning associated with tremor which disappeared under hypnotism, and was cured by two or three applications.

Dr. KNAPP recognized the tendency to auto-suggestion and the exaggeration of symptoms brought out in medico-legal trials. Neither of these sources of error had been present in his cases, however, as suits for damages were not in progress, and all the patients had been anxious to get well.

Heat Centers in Man.—Dr. ISAAC OTT, of Easton, Pa., read a paper with this title in which he said that several centers had been demonstrated, injury of which was followed by increased temperature. All had peculiar laws which served to distinguish one from the other. The author referred especially to a cortical center in the convolutions about the fissure of Rolando, a center about the corpus striatum, and a center in the thalamus. The peculiarities of malarial temperatures corresponded to results obtained by experiments upon the thalamic center.

Dr. GRAY referred to a case of local leptomeningitis above the fissure of Sylvius in which the temperature had at no time been above normal.

Dr. LLOYD referred to a case of subnormal temperature after lesion of the motor region.

Dr. OTT explained that he had stated simply that excision of the centers caused rise of temperature; he had not stated whether these centers were inhibitory or not.

A Clinical Report of Cases of Epilepsy following Cerebral Hemiplegia.—Dr. E. D. FISHER, of New York, read a paper with this title in which he stated that the epilepsy of infantile spastic hemiplegia was of the idiopathic type. There was loss of consciousness with progressive imbecility.

Dr. KNAPP suggested the existence of trophic centers in the cortex. He had seen cases of infantile hemiplegia in which the

atrophy had been as great as that in many cases of spinal paralysis.

Dr. G. E. WALTON described a local epileptic attack. The patient had been healthy to within a few weeks, when the attacks had commenced. The convulsion had affected the left side of the face, there had been slight dilatation of the pupils, and the head had been turned over the left shoulder.

Dr. FISHER suggested another proof that the epilepsy of this condition was not of the Jacksonian type, the fact that there was no aura, or only an epigastric aura.

The Relation of Renal Diseases to Diseases of the Nervous System.—Dr. ROBERT T. EDES, of Washington, read a paper on this subject in which he discussed only the rôle of renal diseases in the production of diseases of the nervous system. The phenomena of localized uræmia were due to the retention of water, urea, extractives, potassium salts, and other substances among which the ptomaines could be probably included. The mere retention of urea was not a very serious matter. Anuria was tolerated for a considerable time in the healthy state. The symptoms of poisoning were neurotic, angeioneurotic, anæmic, hydræmic, urotoxic, and uroseptic. The propriety of small doses of opium was suggested for the relief of the nervous symptoms of Bright's disease.

Dr. F. X. DERGUM, of Philadelphia, agreed in a general way with the author, but thought that one should be careful about making deductions which assumed that urea was not injurious to the organism, even in the highest degree. He was willing to try morphine in these cases.

Dr. SEGUIN stated that the most characteristic headache of the prealbuminuric stage of Bright's disease was of the occipital, bilateral form. Dementia paralytica might give rise to confusion in diagnosis. There was high arterial tension in this condition; we might find signs of a coexisting interstitial nephritis, while the epileptoid and apoplectoid attacks might really be due to uræmia. The speaker was not opposed to the trial of the morphine treatment if the nerve symptoms were prominent and persistent and proper precautions could be insured, the responsibility of such advice being partly justified by the fatal nature of the disease.

Dr. GRAY also referred to several cases in which the differential diagnosis had been obscure. The occipital headaches of nephritis often had a quasi-periodicity, with marked relief for many days from a good dose of quinine. On several occasions the speaker had verified the test proposed by Dr. McBride for distinguishing the coma of Bright's disease from an attack of hemiplegia. A man woke up to find himself on the floor, and it became uncertain whether he had fallen under the influence of apoplexy or of the coma of Bright's disease. The cutaneous and tendon reflexes presented the differential test.

Dr. DERGUM stated that it was his custom to treat all doubtful cases as cases of Bright's disease. A man sixty-eight years of age, without any previous seizure, had had twenty-six convulsions within a short time, limited to the right side of the body and face; he had also had one general convulsion. This man had been sweated and recovered consciousness, and was now apparently well. There had evidently been no hæmorrhage.

Dr. ZENNER suggested localized œdema as the origin of the symptoms in such a case, or possibly a plug which had been subsequently washed away.

Dr. EDES stated that urea was not a highly dangerous product. The relief afforded by diaphoresis was very slight compared to the kidney elimination. Morphine, if used at all in these cases, should be used with the greatest caution and in the smallest doses which would produce the stimulant effect. The speaker hoped that no one present would regard him as having

recommended the procedure, and that if any one did use it he would do so entirely upon his own responsibility.

On the Cortical Localization of Cutaneous Sensations.—Dr. C. L. DANA, of New York, read a paper in which he considered the convolutions about the fissure of Rolando the centers for cutaneous sensation, the area thus represented being less narrowly limited than that for the motor centers.

Dr. C. K. MILLS, of Philadelphia, considered the paper interesting and valuable, yet the final inferences were, he thought, not sustained. He had himself recently gone over cases with the same object in view. It was probable that these cases were at least partly the same. It had been his decision that the limbic lobe, the præcuneus, and the postero-parietal region corresponded to the cortical areas for cutaneous sensation.

Dr. M. A. STARR, of New York, considered Dr. Dana's paper one of great value. In the posterior part of the internal capsule, behind the pyramidal tract, there was a tract known as sensory, going to the parietal and the post-central convolutions. The direction of this bundle of fibers was out of, not into, to the gyrus fornicatus. These facts aided the view advanced by Dr. Dana, and not the view of Ferrier, advanced by Dr. Mills. Further, in comparative anatomy, Zuckerkandl had connected the sense of smell with the gyrus fornicatus, which was small in animals having but a slight sense of smell, though they might have a large general sensory surface, and, conversely, large where the sense of smell was prominent.

Dr. SEGUIN stated that the results of extirpation of the motor zone would support Schiff's theory of a sensori-motor function. The aura of localized epilepsy in brain tumor was another evidence in its favor.

Dr. DANA acknowledged that with a special sense, such as the tactile sense, it seemed more rational that there should be a special center. He had started in his study of the subject strongly prejudiced in favor of the gyrus fornicatus. The facts of pathology were, however, opposed to the existence of a sensory center in the limbic lobe.

On a Subcutaneous Connective-tissue Dystrophy of the Arms and Back associated with Symptoms resembling Myxœdema.—Dr. DERGUM read a paper on this subject.

The PRESIDENT considered that, pathologically, the affection described appeared to be related to myxœdema; clinically, the relation did not appear distinct.

Dr. DERGUM stated that the fluid which had exuded in his case had resembled lymph rather than the denser fluid of myxœdema. He thought that the case was allied to the type without being a true myxœdema. He referred to the fact, however, that in quite a number of cases of myxœdema mental symptoms had not been marked. In some cases, too, the thyroid had not been enlarged, but wanting. He thought it difficult to determine minor degrees of enlargement of the thyroid through the skin.

On Subacute Progressive Polymyositis.—Dr. GEORGE W. JACOBY, of New York, related the history of a case in which he said there had been tension, pain, and redness of the skin, first in the calves and later in the arms. The tendons had felt like tense cords. There had been tenderness on pressure over the muscles. There had been no sensitiveness on pressure over the nerve-trunks and no fibrillar twitchings. Acute cirrhosis of the liver had supervened. The intercostals and the abdominal muscles had then become affected. There had been pain in swallowing, and slight rotation of the head had been unbearable. The face and eyes had not been affected. The sensibility had been normal. The patient had died of marasmus. An autopsy had not been obtained, but specimens taken from the affected muscles had shown an increase of the connective tissue and many fibers waxy or homogeneous in appearance. There had been

augmentation of the nuclei in other fibers, so that the fiber had had the appearance of a giant cell which, at another stage, had broken up into medullary corpuscles, terminating in fibrous degeneration. There had been present also, as had been stated, both the waxy and the fatty degenerations, the waxy being the more common. There had been in this case thus a chronic plastic formative process upon which was grafted a myositis and a perimyositis. The fatty and the waxy degenerations were the product of the chronic affection.

Muscular Dystrophies.—Dr. B. SACHS, of New York, followed with a paper in which he proposed to discard the many names used to distinguish progressive muscular wasting in favor of a main classification into two groups, namely: 1. Those of amyotrophic spinal origin, divided into the arm and leg type. 2. The primary muscular dystrophies.

Dr. KNAPP distinguished between the primary and the secondary myopathies. There was hypertrophy of the fibers in the former and not in the latter.

Dr. JACOBY thought it doubtful whether all cases could be classed as spinal or muscular in origin. This division had been considered unassailable, but there were cases without nerve symptoms and also without heredity, and without hypertrophy or pseudo-hypertrophy; and, on the other hand, there were certain muscular forms with fibrillary twitchings and the degeneration reaction. As to the primary differential test: the presence of hypertrophied muscle fibers. While the presence of such fibers might exclude spinal trouble, their absence proved nothing. Even this rule, however, was not altogether reliable. The microscope revealed two processes—that of inflammation and that of degeneration. The appearances varied, too, at different stages.

Dr. GRAY stated that, while pseudo-muscular hypertrophy was probably of peripheral origin, he thought the question was still open to doubt. Dr. Sachs had said that there were no fibrillary contractions in these cases. When the speaker returned to New York he would be glad to show him a case in which there were such fibrillary contractions. Even pseudo-muscular hypertrophy was mixed with atrophy. He thought it wiser to acknowledge no conclusions rather than to adopt false conclusions, even though they should be those of Dr. Erb.

Dr. W. A. HAMMOND, of New York, said that eventually he might accept the classification presented, but for the present he would not change, but would sustain the position of Dr. Gray.

Dr. WALTON referred to a case of the peroneal type, myopathic in origin. Heredity was traced into the beginning of the seventeenth century. The patient was sixty-two years of age, and had been affected for twenty years. Her mother had died at eighty-seven, having been affected since her thirty-fifth year.

The PRESIDENT referred to a case of hereditary atrophy in which there were no gross signs of pseudo-hypertrophy, but the microscope showed hypertrophic as well as atrophic fibers.

A Case of Focal Epilepsy successfully treated by Trephining and Excision of the Motor Center.—Dr. JAMES H. LLOYD read a paper thus entitled.

Dr. JOHN B. DEEVER reported the details of the operation. No lesion had been found, but that portion of the cortex had been excised faradization of which had produced the motions of the epileptic attacks. Three months had elapsed since the operation without convulsions.

Dr. DAVID FERRIER congratulated the gentlemen upon the success of their operation. It was perhaps, however, a little early to say that the patient was cured. The case was interesting also as a physiological experiment. He understood that there was paralysis after the operation, while the tactile sense was perfect, any difficulty in distinguishing objects being evidently due to impairment of the mechanism upon which associated

movements depended. The speaker inquired whether Dr. Lloyd had tested the sensibility by passive movements. The case was interesting as a proof that, after the removal of the motor centers, the tactile sensibility was preserved.

Mr. VICTOR HORSLEY, of London, referring to the question of recurrence in epilepsy, cited a case in which the facial region had been excised after stimulation with faradism. Lingual equilibrium had been obtained, which had not been present before the operation; and the tits had been absent for three weeks, when they had recurred. The speaker referred to another case in which, after excision of a focus, there had been no fits for two years; and another, operated upon twenty-three months ago, in which there had been no fits since. He would not, however, venture to say that the patient was cured. In his opinion, five years should first have elapsed. To free the patient from epileptic attacks for six months or two years would, however, restore mental power, and was no insignificant result. He agreed with the previous speaker that the operation should be done as early as possible. The faradization of the cortex for the purpose of diagnosis was a step in advance. He had himself irritated the corpora quadrigemina in one case without unfavorable symptoms.

Dr. GRAY was glad to hear so conservative a rule as that of allowing five years to elapse for determining the cure of focal epilepsy. Even in idiopathic epilepsy the duration of the intervals between the attacks varied enormously at different times. In several cases in his experience the fits had been absent for three or four years. In one case, that of an intelligent man, there had been cessation for ten years.

Dr. MILLS shared Dr. Ferrier's impression that true cutaneous sensibility was not destroyed in this case.

Dr. DANA had understood Dr. Lloyd to state that there had been some disturbance of the sensibility in the fingers; he had also stated that there had been a loss of the sensory aura present before the operation. It was hardly fair to say that the cutaneous sensibility had not been disturbed. Further, the part excised had been small; the sense centers occupied a space larger than that of the motor centers.

Dr. SEGUIN would place upon record the fact that the patient operated upon by Dr. Weir last year was in a fair condition of recovery. During the summer he had had a few convulsions affecting the right hand and cheek. There were no headaches, and there was no choked disc. There was more paresis of the right arm than in the summer. There was unquestionable anæsthesia of the cheek, hand, and forearm to contact tests, as well as to the æsthesiometer. The patient did not feel slight contact tests unless there was some indication in the temperature of the object applied.

A Case of Acute Fatal Neuritis of Infectious Origin.—

The PRESIDENT related the history of a case occurring in a man of twenty-eight years, free from constitutional disease, who had contracted neuritis after exposure to cold and rain. The disturbances of sensibility had not been marked. In the early part of the disease there had been paræsthesias and pain, but both had disappeared very early. The patient had died of paralysis of the respiration. The spleen was greatly enlarged, the lungs studded with small hæmorrhages. Disseminated changes in the nerve-fibers and cell-infiltration were found in a variety of nerves, as well as in the nerve-roots, including that of the vagus. The spinal cord and medulla were relatively, but not absolutely, healthy.

Dr. WEBBER, of Boston, had four years ago had a large number of cases under observation in the Boston City Hospital, with three deaths. The history of the case cited by the president was similar to that of these fatal cases.

Dr. PYE SMITH, of London, referred to a case of his own in

which both alcoholism and gout had been excluded. He inquired in regard to the position of gout in the ætiology of the affection here.

Dr. VAN BIBBER referred to a case of multiple neuritis in which the facial nerve had been affected. The attack had passed off, and the patient recovered.

Dr. DANA had not met or found reported a case in which gout had given rise to multiple neuritis; local neuritis was not uncommon from gout. He had seen one case, and perhaps two cases, of multiple neuritis from rheumatism. In one case there had been for several years attacks of rheumatism each autumn. On one occasion, in place of the usual attack, the patient had had an attack of typical multiple neuritis.

The PRESIDENT inquired whether any gentleman had met with the multiple pulmonary hæmorrhages present in his case.

Dr. WEBBER stated that in the fatal case which he had examined there had been no such hæmorrhages, but that in that case the vagus had not been affected.

The PRESIDENT agreed with Dr. Dana that true gout was rare, at least in Boston. Neuritis did accompany rheumatism, however, both as a local and as a general disease.

Dislocation of Cervical Vertebrae.—Dr. G. L. WALTON read a paper in which he gave the history of two cases in which spontaneous recovery had taken place. In these cases there had been no paralysis. The author exhibited a photograph of a skull and spine, showing fracture and dislocation of cervical vertebra without interference with the spinal canal.

Dr. WEBBER referred to a case in which it had been supposed that there had been dislocation of a cervical vertebra so as to compress the cord sufficiently to interfere with its function. When it was reduced, function was recovered so far as the cord was concerned. The injury of the nerves of exit at the point of dislocation had been more permanent, explaining the persistence of paresis and pain in the upper extremities.

Dr. GRAY referred to a case, reported seven or eight years before, in which the third cervical vertebra had been dislocated in a young boy from falling down a flight of steps. There had been paralysis of the upper extremities with paresis of the lower, and deglutition had been impaired. The dislocation had been reduced under ether, the curious matter being that the displaced fragment went into place without any snap, and only by palpation of the pharynx through the mouth could its reduction be assured. In one week the boy had been up, and had again fallen down the steps, reproducing the same dislocation. Again he had been given ether, and this time, the ligaments having recovered some of their elasticity, the part went into place with a snap, and every symptom had disappeared within forty-eight hours.

The PRESIDENT understood that in Dr. Walton's case there had remained atrophy of the tongue. The nerves were thus permanently impaired. Possibly rupture at the root would account for this. There was traction exerted in these cases in which the nerves of one side were at a disadvantage, and he thought that rupture was very probable.

Dr. FISHER recalled the case of an old woman in an almshouse who had had a dislocation with paralysis. That in the legs had been recovered from, but in the arms paresis and wasting had remained. The condition had been ascribed in this case to injury of the nerve-roots. There was no exaggerated reflex below in the case.

A Case presenting the Typical Symptoms of Disseminated Sclerosis with the Post-mortem Showing of Lep-tomeningitis Cerebri.—Dr. L. C. GRAY presented a paper thus entitled. The patient had had the scanning speech, tremor of the voluntary type, affecting both upper and lower extremities and the tongue. There had been jerking of the muscles of the

face, and nystagmus. The patient had had apoplectoid attacks with a temperature of 102°, 103°, and 104°, with chattering of the lower jaw against the upper during the attacks; he had been demented and obnoxious. Motor weakness had not been marked until three weeks before death.

Dr. WEBBER referred to a case of disseminated sclerosis in which the tremor had been entirely wanting, the case having been diagnosticated as one of locomotor ataxia. Tremor had been supposed to be produced by sclerosis of the medulla or pons, and the explanation had been that the parts producing tremor had not been affected. The case of Dr. Gray's was interesting as presenting tremor with a lesion of the cortex.

Dr. BANNISTER considered tremor due to interference with conduction, not to the cortical affection *per se*.

Dr. MILLS thought that these cases should make us more careful in the analysis of symptomatology. Even symptoms regarded as pathognomonic were probably not due to the nature of the lesion but to its location in the cerebro-spinal axis, irrespective of hard and fast lines.

The PRESIDENT suggested that the tremor in Dr. Gray's case had been similar to that found in old cases of cerebro-spinal meningitis. This was a species of intention tremor.

Dr. GRAY replied that he had in his mind a picture of the tremor of meningitis and that it did not correspond to that in his case. This man had had a voluntary tremor throughout and scanning speech. The question of diagnosis lay between intracranial syphilis, disseminated sclerosis, and general paralysis of the insane.

Dr. BLACKBURN exhibited specimens hardened and prepared for class demonstration by infiltration with Japan wax. On motion, Dr. Blackburn was invited to contribute a paper to the "Transactions" upon the subject.

Aneurysm of an Anomalous Artery causing Antero-posterior Division of the Optic Chiasm and Bitemporal Hemianopsia.—A paper by Dr. S. WEIR MITCHELL with this title was read by Dr. Dereum.

Contributions to the Study of Muscular Tremor.—Dr. FREDERICK PETERSEN, of New York, read a paper with this title. The tremors had been registered with Edmunds's sphygmograph, a modification of Pond's.

Dr. SINKLER, of Philadelphia, asked whether the author had obtained the knee clonus and the ankle clonus at the same time.

Dr. PETERSEN replied that he had never attempted it.

Dr. SINKLER explained that, if one first started the patellar clonus and then the ankle clonus, usually the latter would stop the former, but sometimes both would continue for a few seconds together. It would be interesting to know whether they coincided.

Dr. HARE had had some experience in attempting the registry of tremors. The practical difficulty lay in obtaining the tracing of the up-and-down and the transverse movement at the same time.

Post-hemiplegic Disturbances of Motion in Children.—Dr. PHILIP C. KNAPP read a paper thus entitled.

A Case of Tumor of the Cervical Spine.—Dr. J. H. LLOYD and Dr. J. E. DEEVER read the report of the history, and Dr. E. O. SHAKESPEARE presented a pathological report. The patient had had hemiplegic symptoms. The tumor had its origin in osteitis of the vertebrae. There was present also a secondary pachymeningitis and hæmorrhage in the cord. The patient died three days after the operation.

Dr. MILLS suggested that the case was interesting from a physiological point of view. The lesion occupied the lateral column, invading the gray matter, but leaving untouched portions which might be concluded to contain the trophic centers of the cord.

The PRESIDENT referred to the fact that the lesion had occupied the antero-lateral column. The statements of Gowers, borne out by a case of his own, located pain and temperature sense in the antero-lateral column. He inquired whether the pain and temperature sense was disturbed in this case.

Dr. LLOYD explained that the patient recognized variations of heat; also the pain from a pinch.

Hereditary Chorea.—Dr. WHARTON SINKLER, of Philadelphia, read a paper on this subject in which he said that the affection consisted in involuntary movements of the face, neck, and extremities, terminating in dementia. The families observed by the author had been found in the southeastern part of New York. The affection was called megrims by the country people, and its hereditary character was recognized by prohibitions of marriage with the megrim families. It appeared between the thirtieth and fortieth years, was incurable, and eventuated in mental disease. Hyoscyamine had for a time diminished the movements in one case.

Dr. KNAPP referred to the case of a woman who had visited the dispensary for some petty ailment and had attracted his attention by her violent choreic movements, which had come on at the age of twenty years without assignable cause. There had been no noticeable mental impairment in the case.

Dr. MILLS had recently seen one case of Huntington's chorea. The patient was forty-one years of age, married. One year ago she had been attacked with twitching movements in the hands, head, and trunk. Speech had been affected and there had been a peculiar nervous condition. The patient's father had been similarly affected, and her child had suffered from peculiar choreic movements.

Dr. GAY, of London, stated that they had in England a horse disease which was called the megrims. The affected animal was apt to fall down.

Dr. BRUSH stated that on Long Island when a man was simply angry he was said to have the megrims. He thought the term was very indefinitely used. About Stamford and North Haddon there would be found, he thought, a number of families who suffered with the disease under discussion.

The PRESIDENT stated that the term megrims was used for various distempers among the common people.

Dr. DAVID FERRIER and Mr. VICTOR HORSLEY, F. R. S., of London, were proposed as honorary members of the association.

Dr. E. C. SEGUIN was elected president for the ensuing year.

Miscellany.

The New York Academy of Medicine.—The programme for the next meeting of the Section in Neurology, on Friday evening, the 9th inst., is as follows: "Report of a Case of Syringomyelia, with Autopsy and Exhibition of Microscopical Sections of the Spinal Cord," by Dr. Ira Van Gieson; and "Preliminary Report on Experiments made to Locate the Sight Center in various Animals, with Exhibition of Animals and Specimens," by Dr. W. G. Thompson and Dr. Sanger Brown.

At the next meeting of the Section in Surgery, on Monday evening, the 12th inst., Dr. G. B. Phelps will read a paper on "Tetanus Hydrophobicus"; Dr. W. K. Otis, one on "Recent Improvements in Endoscopic Apparatus"; and Dr. George E. Brewer, one entitled "Report of a Case of Congenital Absence of the Entire Rectum—Artificial Anus established with Perfect Sphincter Formation."

The American Medical Association.—The committee of arrangements announces that the opening day of the fortieth annual meeting,

to be held at Newport, R. I., has been postponed to Tuesday, June 25, 1889.

The Washington Obstetrical and Gynecological Society has elected officers for the ensuing year as follows: President, Dr. Joseph Taber Johnson; vice-presidents, Dr. D. W. Prentiss and Dr. W. W. Johnston; recording secretary, Dr. S. S. Adams; corresponding secretary, Dr. G. W. Cook; treasurer, Dr. George Byrd Harrison.

The German Medical Faculties.—According to Dr. Ascherson's "Deutscher Universitäts-Kalender," cited in the "Deutsche Medizinische Zeitung," the strength of the medical faculties of the various universities in the German Empire is as follows:

	Ordinary professors.	Extraordinary professors.	Privat-Dozenten.
Berlin	17	28	59
Bonn	9	10	8
Breslau	9	17	13
Erlangen	8	4	4
Freiburg	12	5	9
Giessen	8	3	3
Göttingen	12	7	4
Greifswald	9	7	5
Halle	10	9	8
Heidelberg	12	8	8
Jena	9	8	5
Kiel	8	4	12
Königsberg	8	10	9
Leipsic	15	8	22
Marburg	13	3	4
Munich	13	9	25
Rostock	8	2	2
Strassburg	15	7	12
Tübingen	8	6	2
Würzburg	9	8	9
Total	212	163	223

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for the month of September, there were 425 deaths, including 3 from cerebro-spinal meningitis, 8 from cholera infantum, 13 from croup and diphtheria, 1 from diarrhoea, 18 from typhoid fever, 2 from malarial fever, 2 from pyæmia, 1 from whooping-cough, 1 from scarlet fever, 1 from septicæmia, and 2 from small-pox.

The Health of Kansas City.—For the week ending Saturday, October 20th, according to the city physician's report, there were 39 deaths, including 3 from croup and diphtheria, 1 from dysentery, 1 from enterocolitis, 7 from typhoid fever, 3 from typho-malarial fever, and 1 from pyæmia. The death-rate was 11.2 in a thousand of the population. The number of births reported was 41.—According to the "Weekly Return of Births and Deaths" to the Health Department for the week ending Saturday, October 27th, there were 40 deaths, including 1 from cholera infantum, 2 from diphtheria, 1 from malarial fever, 1 from remittent fever, 5 from typhoid fever, 1 from marasmus, and 2 from meningitis.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 26th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending October 6th corresponded to an annual rate of 18.2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Nottingham, viz., 13.1, and the highest in Manchester, viz., 29.8 in a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 5 deaths in Manchester, 2 in Birmingham.

London.—One thousand three hundred and fifty-two deaths were registered during the week, including measles, 39; scarlet fever, 24; diphtheria, 35; whooping-cough, 5; enteric fever, 8; diarrhoea and dysentery, 72; typhus fever, 1. Diseases of the respiratory organs

caused 229 deaths; different forms of violence, 51; and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 16.5 in a thousand. In greater London 1,680 deaths were registered, corresponding to an annual rate of 15.9 in a thousand of the population. In the "outer ring" the deaths included diarrhoea, 23; diphtheria, 6; fever, 7; whooping-cough, 7.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending October 6th in the sixteen principal town districts of Ireland was 18.9 in a thousand of the population. The lowest rate was recorded in Wexford, viz., 4.3, and the highest in Armagh, viz., 46.5 in a thousand. In Dublin 158 deaths were registered, including measles, 2; enteric fever, 3; scarlet fever, 2; diarrhoea, 18; whooping-cough, 7; dysentery, 1; typhus fever, 1.

Bocas del Toro.—The United States consul at Colon, in his dispatch dated October 3, 1888, states that Bocas del Toro is altogether free of any epidemics.

Santiago de Cuba.—Thirteen deaths from yellow fever are reported for the month of August, 1888, and 17 for the first fifteen days of September. Two thousand three hundred and seventy-seven deaths were registered during the year 1887, including yellow fever, 236, and small-pox, 979.

Cardenas.—Consular sanitary report of October 12, 1888, states: "Good health in town and harbor."

Vera Cruz.—The United States consul in his report for the week ending October 11, 1888, states that the city may be considered fairly healthy, as one death of yellow fever is reported 11th instant, but some of the physicians say it is not yellow fever.

Palermo.—Two deaths from small-pox are reported for the month of September, 1888.

Trapani.—One hundred and ninety-five deaths from small-pox are reported for the month of September, 1888—almost all children not vaccinated.

Guaymas, Mexico.—Consular sanitary report dated September 30, 1888, states: "No particular or epidemical sickness in consular district. Sanitary condition good."

Marseilles, France.—Eight hundred and fifteen deaths were registered during the month of September, 1888, including cholera sporadic, 1; small-pox, 4; enteric fever, 56; scarlet fever, 1; diphtheria and croup, 26; and measles, 4. The consul in his report dated October 5, 1888, states that the health of the city is excellent, the average mortality for the month being 3 per diem below the normal rate—an excellent result for September.

Manila, Philippine Islands.—The United States consul, in his dispatch dated September 12, 1888, states that "the disease which was officially declared to be cholera, and which made its appearance at the village of Taytay, 8 miles northwest of Manila, about the middle of last month, and subsequently seemed to have found a strong foothold in this city, has so far subsided that there is very little apprehension of a serious epidemic."

"Although able and experienced physicians declare unhesitatingly that the disease was Asiatic cholera in its most malignant form, the accuracy of the diagnosis is now quite generally doubted, and this doubt is very materially strengthened by the facts in the case. At no time were the authorities willing to consider the trouble epidemic, and declare the port 'dirty,' and the number of deaths did not increase with that fearful rapidity characteristic of this terrible plague."

"It now appears that just before the sickness broke out at Taytay a large consignment of rice, which had been stored in a damp place and soured, was sold among the native shops of the village by some speculative Chinamen who had purchased it at very low rates, owing to its damaged condition. As far as is known, all who ate this rice were attacked with what was supposed to be cholera."

"The symptoms attending the first cases were undoubtedly those of ordinary cholera morbus, but subsequent cases showed the most prominent features of Asiatic cholera. The theory that disease is produced or aggravated by the imagination finds some support in this case. The masses, native and European, seem to live in mortal terror of cholera, which has made fearful ravages throughout these islands, and the first indication of an outbreak fills every one with fear."

"After the disease at Taytay was pronounced genuine cholera, the

daily death-rate increased very rapidly, and although the village was rapidly quarantined, the sickness spread to Manila, and within a week between 60 and 70 deaths occurred. As the death-rate failed to show the usual rapid increase, the hope gained ground that the physicians might be mistaken, and that what was supposed to be genuine cholera might be an unusually aggravated form of cholera morbus. At all events, the number of deaths began to decrease a few days ago, and the fear that the terrible plague of 1882 was to be repeated has now quite subsided. The total number of deaths in Manila since the disease appeared here late in August is 186.

"The port is now considered comparatively clean."

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated popu- lation.	Total deaths from all causes.	DEATHS FROM—								
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping- cough.
Paris	October 6.	2,260,945	846	..	..	2	..	8	3	24	9	4
Glasgow	October 6.	545,678	181	..	..	..	..	..	..	..	..	..
Calcutta	Sept. 1.	433,219	168	10	..	..	..	..	..	..	..	..
Calcutta	Sept. 8.	433,219	174	8	..	..	..	..	..	..	..	..
Amsterdam	October 6.	389,916	153	..	..	..	..	1	..	1	..	..
Munich	Sept. 22.	275,000	164	..	..	..	..	..	3	2	..	..
Belfast	October 6.	227,022	70	..	..	..	..	..	..	1	..	..
Bristol	Sept. 29.	226,510	66	..	..	..	..	..	..	2	..	..
Bristol	October 6.	226,510	61	..	..	..	..	..	..	..	..	..
Genoa	October 6.	179,797	102	..	..	6	..	..	..	1	..	..
Trieste	Sept. 29.	154,500	71	..	4	..	..	..	..	..	..	..
Stuttgart	October 6.	125,510	52	..	..	..	..	..	..	..	..	..
Bremen	Sept. 29.	122,000	52	..	..	..	..	1	..	..	1	..
Havre	Sept. 29.	112,074	77	..	..	1	..	7	..	2	..	..
Barmen	Sept. 29.	109,000	28	..	..	..	..	..	..	1	..	..
Leghorn	Sept. 30.	101,854	40	..	..	..	..	..	..	..	..	..
Cadiz	Sept. 29.	65,028	42	..	..	..	..	..	..	..	..	..
Cadiz	October 6.	65,028	45	..	..	..	..	..	..	..	..	..
Carthage	Sept. 29.	13,000	8	..	..	..	..	..	..	..	..	..
Vera Cruz	October 11	23,800	18	..	1	..	..	..	..	..	..	..
Gibraltar	Sept. 30.	23,631	8	..	..	..	..	..	..	..	..	..
Kingston, Can	October 12	17,300	8	..	..	..	..	..	..	..	..	..
Antigua	October 7.	15,847	7	..	..	..	..	..	..	..	..	..

UNITED STATES.

Barton, Fla.—Dr. J. F. Hartigan reported, under date of October 20, 1888, as follows:

I arrived at DeLand on the 14th of October, and in compliance with your instructions have the honor to report as follows:

DeLand, the county seat, is situated near the geographical center of Volusia County, on a pine ridge fifty feet above the level of St. John's River, its nearest water-course, and five miles distant from the same. It is twenty-five miles from the ocean. Like many other Florida towns of advantageous situation, its development has been rapid and recent. Two years ago a disastrous fire occurred, which destroyed a majority of the business houses, but within a few months the burnt portion was rebuilt with brick buildings. Orange culture is the principal industry.

The town is about three miles from the main line of the Jacksonville, Tampa, and Key West Railroad, with which it is connected by a branch line. Another road is being constructed to extend to the Blue Springs, Orange City, and Atlantic. The spirit of progress has struck this place in other ways. With a population of only two thousand, the town has an electric light company, an ice factory, a model dairy, and the DeLand University, organized under special charter.

Filtered cistern water is mainly used for cooking and drinking purposes; surface wells are also pretty general, but during a drought many who use them are attacked with dysentery. Mild cases of typhoid are also observed at such times, especially where there is carelessness in depositing slops and garbage. Efforts have been made to furnish the town with artesian water. About five hundred feet have been bored, and water found, but there is not enough pressure to bring it to the surface. Work is at present suspended, but it will soon be resumed with steam-power, when it is thought the necessary supply can be obtained.

The night-soil is carted off a mile from town to a low place, disinfected and dumped, then covered over with sand.

No burial permits are required. The number of deaths from May to October could not be ascertained, but it is safe to say they were below the average. There are two cemeteries—one a mile and a quarter, the other three miles from town.

Mayor—F. S. Goodrich.

Health Officer—Dr. R. H. Gillen.

Tampa, Fla.—Dr. J. P. Wall, president Board of Health, in his report dated October 17, 1888, states that "during the week ending to-day I have seen 2 cases of yellow fever—both mild—and 2 have been reported, making a total of 4 cases for the week. . . . No new cases since Sunday, the 14th instant. . . . I do not think that there is much more material here for the fever, and as there are very few refugees to return, I hope that the fever is about done. . . . The fever here has been of a remarkably mild type this season, not over 20 cases having albuminous urine, and only 5 deaths, as already reported. . . . Judging by the coolness of the weather this month, I think that we will likely have a pretty cool winter as compared with last; and if the fever does not hibernate in some obscure village again where its presence is denied, I think that we will get rid of it."

St. Augustine, Fla.—Dr. B. F. Fox telegraphed as follows, October 18th: "I have thoroughly inspected St. Augustine. No yellow fever, no suspicious case. Will wait orders."

Bartow, Fla.—Dr. J. F. Hartigan telegraphs as follows, October 20th: "Just arrived here; have investigated Orlando and Kissimmee; both healthy. Will mail report to-morrow."

October 22d: "Bartow healthy; will be at Fort Meade Wednesday."

Palatka, Fla.—Surgeon W. H. H. Hutton telegraphs as follows:

October 23d: "Three cases and 1 death reported at Enterprise, opposite Sanford. Have instructed Carlisle, secretary Board of Health, to isolate cases. Will send Posey there to-morrow."

Palmetto, Fla.—Dr. M. B. Harrison telegraphs as follows:

October 23d: "For eight days ending 6 P. M. Monday, October 22d, there were at Palmetto new cases of yellow fever, 3; deaths, none. Total number cases to date, 79. At Manatee, new cases, 1; deaths, none. Total number cases to date, 41.

Gainesville, Fla.—Assistant Surgeon Martin telegraphs as follows: October 20: "Two new cases (colored)."

October 21st: "One new case, D. Silghman (white)."

October 23d: "One new case, Dr. N. D. Phillips."

Camp Perry, Fla.—Surgeon W. H. H. Hutton telegraphs as follows:

October 19th: "Morning report. Present: Officers, 6; guards, 11; refugees arrived, 7; discharged, 15; remaining, 82; employees, 44. Fever camp, 5. Dr. Posey instructed to fumigate and disinfect Callahan."

October 20th: "Morning report. Present: Officers, 6; guards, 11; refugees arrived, 23; employees, 43; discharged, 11; remaining, 94. Fever camp, 6."

October 20th: "To-day completes two months at Camp Perry; 810 refugees from infected points have been received; 721 have been discharged; 25 cases of fever developed; 1 death September 9th; not a case contracted in camp. Our 60 unacclimated employees, 5 of whom have been two months in fever camp, not a single case of fever of any kind among them. Not a known case of fever reported from the 721 cases discharged and scattered to all parts of the country. In view of these facts, how any sanitarians can consider Camp Perry as an infected place is incomprehensible. Drs. Faget and Posey, of New Orleans, Guitéras, and Geddings give this their emphatic indorsement."

October 21st: "Morning report. Present: Officers, 6; guards, 11; employees, 37; refugees arrived, 15; discharged, 5; remaining, 104. Fever camp, 6."

October 22d: "Morning report. Present: Officers, 6; guards, 11; employees, 37; refugees arrived, 7; discharged, 6; remaining, 105. Fever camp, 2 sick; 6 convalescent."

October 23d: "Morning report. Present: Officers, 6; guards, 11; employees, 35; refugees arrived, 11; discharged, 9; remaining, 107. Fever camp, sick, 2; convalescent, 6."

October 24th: "Morning report. Present: Officers, 6; guards, 11; employees, 35; refugees arrived, 32; discharged, 8; remaining, 131. Fever camp, 5; sick, 2; convalescent, 3."

Jacksonville, Fla.—Dr. J. Y. Porter telegraphs as follows:

October 20th: "New cases to-day, 50; death, 1; total cases reported, 3,769; deaths, 327. Patients, St. Luke's, 12; patients, Sand Hills, 20. Legal authorities of city and county request the aid of the

Government to prevent refugees returning, and by formal resolution this evening relinquished to me, as your agent, all their rights in premises, and ample power to use measures to keep people out. Accordingly I have put on an armed mounted cordon on county roads, and will notify railroad companies. Request confirmation of my action."

October 21st: "New cases to-day, 27; deaths, 4; total cases reported, 3,796; deaths, 331. Patients, St. Luke's, 13; Sand Hills, 20."

October 22d: "New cases to-day, 43; deaths, 1; total cases reported, 3,839; deaths, 332. Patients, St. Luke's, 10; Sand Hills, 20."

October 23d: "New cases to-day, 33; death, 1; total cases reported, 3,872; deaths, 333. Patients, St. Luke's, 9; patients, Sand Hills, 17."

Fernandina, Fla.—Dr. Ross telegraphs as follows:

October 24th: "Report for twenty-four hours ending 6 P. M.: Ten new cases, two white; one death, Victoria Cumlandu (white), aged ten."

Jacksonville, Fla.—Dr. J. Y. Porter telegraphs as follows:

October 24th: "New cases, 31; deaths, 4; total cases, 3,903; deaths, 337. Patients, St. Luke's, 10; patients, Sand Hills, 16."

Dr. Wylie in Sanford writes: "Yellow fever in Enterprise, Fla. Eight cases now, 2 deaths lately. Orange County has cordon of thirty men."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y.	Oct. 20.	1,539,908	661	..	..	..	..	..	..	12	16	18	9
Brooklyn, N. Y.	Oct. 13.	805,855	284	..	..	..	..	..	..	8	7	8	8
Chicago, Ill.	Oct. 20.	800,000	233	..	..	..	..	..	..	..	..	..	..
Baltimore, Md.	Oct. 20.	431,879	139	..	..	..	..	..	..	4	1	8	3
Boston, Mass.	Oct. 20.	415,000	..	..	..	..	..	..	..	11	1	11	..
San Francisco, Cal.	Oct. 12.	300,000	100	..	..	..	..	..	..	3	..	2	1
New Orleans, La.	Oct. 13.	248,000	122	..	..	..	..	..	..	1	..	10	..
Cleveland, Ohio.	Oct. 6.	227,861	76	..	..	..	..	..	..	..	..	4	..
Louisville, Ky.	Oct. 20.	200,000	58	..	..	..	..	..	..	2	..	2	..
Milwaukee, Wis.	Oct. 20.	195,000	55	..	..	..	..	..	..	2	3	1	..
Kansas City, Mo.	Oct. 20.	180,000	39	..	..	..	..	..	..	..	..	1	..
Newark, N. J.	Oct. 16.	174,954	76	..	..	..	..	..	..	6	..	8	..
Rochester, N. Y.	Oct. 20.	120,000	..	..	..	..	..	..	..	1	..	..	..
Detroit, Mich.	Oct. 20.	116,340	78	..	..	..	..	..	..	4	..	8	1
Richmond, Va.	Oct. 20.	100,000	42	..	..	..	..	..	..	1	..	..	..
Denver, Col.	Oct. 19.	96,000	26	..	..	..	..	..	..	9	1	..	..
New Haven, Conn.	Oct. 20.	82,000	51	..	..	..	..	..	..	1	..	3	..
Toledo, Ohio.	Oct. 19.	80,000	8	..	..	..	..	..	..	1	..	..	..
Nashville, Tenn.	Oct. 20.	65,153	15	..	..	..	..	..	..	1	..	1	..
Fall River, Mass.	Oct. 20.	65,000	22	..	..	..	..	..	..	1	1	..	..
Evansville, Ind.	Oct. 20.	53,000	15	..	..	..	..	..	..	..	..	1	..
Savannah, Ga.	Oct. 9.	52,827	30	..	..	..	..	..	..	..	..	..	1
Lynn, Mass.	Oct. 20.	50,000	12	..	..	..	..	..	..	..	..	..	..
Manchester, N. H.	Oct. 13.	41,000	13	..	..	..	..	..	..	..	..	3	..
Galveston, Texas.	Oct. 12.	40,000	15	..	..	..	..	..	..	..	..	..	..
Mobile, Ala.	Oct. 20.	40,000	12	..	..	..	..	..	..	1	..	..	..
Portland, Me.	Oct. 20.	40,000	14	..	..	..	..	..	..	..	..	..	..
Wheeling, W. Va.	Oct. 20.	35,000	10	..	..	..	..	..	..	1	..	..	..
E. Saginaw, Mich.	Oct. 20.	33,000	14	..	..	..	..	..	..	..	..	1	..
Burlington, Ia.	Oct. 17.	30,166	6	..	..	..	..	..	..	..	..	2	..
New Albany, Ind.	Oct. 20.	30,000	4	..	..	..	..	..	..	..	..	..	..
Altoona, Pa.	Oct. 13.	29,546	9	..	..	..	..	..	..	2	..	..	..
New Bedford, Mass.	Oct. 20.	26,845	17	..	..	..	..	..	..	1	1	1	..
Auburn, N. Y.	Oct. 20.	25,000	8	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass.	Oct. 20.	25,000	8	..	..	..	..	..	..	..	..	..	..
Jackson, Mich.	Oct. 20.	22,500	6	..	..	..	..	..	..	1	..	..	..
Poughkeepsie, N.Y.	Oct. 19.	22,000	8	..	..	..	..	..	..	..	..	1	..
Newton, Mass.	Oct. 13.	21,105	3	..	..	..	..	..	..	2	..	1	..
Newton, Mass.	Oct. 20.	21,105	3	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	Oct. 11.	20,466	8	..	..	..	..	..	..	..	..	..	..
Newport, R. I.	Oct. 19.	20,466	7	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla.	Oct. 20.	15,000	6	..	..	..	..	..	..	..	..	..	..

The American Public Health Association will hold its sixteenth annual meeting at Milwaukee, in Athenæum Hall, on Tuesday, Wednesday, Thursday, and Friday, the 20th, 21st, 22d, and 23d inst. The preliminary programme gives the following titles: An address by the president, Dr. Charles N. Hewitt, of Red Wing, Minn.; "The History and Administration of Quarantine in Texas, 1878 to 1888," by Dr. R. Rutherford, of Texas; "The Canadian System of Maritime Sanitation," by Dr. F. Montizambert, of Grosse Isle, Canada; "Yellow Fever Panics and Useless Quarantines—Limitation by Temperature," by Dr. J. H. Rauch, of Illinois; "The Organization of the National Health Service," by Dr. H. P. Walcott, of Massachusetts; "State Boards of Health," by Dr. Ezra M. Hunt, of New Jersey; "The Difficulties and Success of the Public Health Service in Large Cities," by Dr. Oscar C.

De Wolf, of Illinois; "Ontario Sanitary Legislation, its Strength and its Weakness," by Dr. John Coventry, of Canada; "The Destruction of Organic Matter by Fire as a Sanitary Measure—Garbage Furnaces," by Dr. S. S. Kilvington, of Minnesota; "Vaccination as a Protection from the Infection of Small-pox," by Dr. D. W. Hand, of Minnesota; "Tuberculosis; its Origin, Detection, and Control," by Dr. D. E. Salmon, of the Bureau of Animal Industry, Washington; "Veterinary Sanitary Work in Wisconsin, with special Reference to Diseases Communicable to Man," by Dr. V. T. Atkinson, of Wisconsin; "The Relations of Bacteriology to the Discovery and Prevention of Causes of Infectious Diseases among Men and Animals," by Dr. Theobald Smith, of the Bureau of Animal Industry, Washington; "Popular and Scholastic Education in Hygiene," by Dr. J. T. Reeve, of Wisconsin; "Remarks on the Classification of Diseases," by Dr. Henry B. Baker, of Michigan; "Meteorological Observations as respects Disease Prevalence," by Professor Payne, of Minnesota; and "Some Personal Observations on Yellow Fever and its Habitudes, as opposed to the Fallacies and Dangers of Personal Quarantine," by Dr. A. N. Bell, of New York.

THERAPEUTICAL NOTES.

The Hedwigia Balsamifera.—Gaucher, Combemale, and Marestang ("Province médicale," Oct. 6, 1888, p. 571) conclude from their experiments with this West Indian terebinthaceous tree that its physiological action is as follows: A rapid and considerable reduction of the temperature; paralysis beginning posteriorly, and extending progressively to the rest of the body, accompanied with general convulsions, dilatation of the pupils, and ejaculation [of what?]; vaso-dilator phenomena discernible in the ear; and, in cases of fatal poisoning, irregularity of the breathing and paresis of the heart. After death, the viscera are found congested, especially the lungs, the congestion being proportionate in degree to the rapidity with which death has ensued. The *Hedwigia balsamifera*, then, is a hypothermic, paralyzing, and convulsive poison, the action of which extends progressively from the lower part of the spinal cord to the medulla oblongata. The authors have found an alkaloid and a resin in the extract. The alkaloid is more decidedly convulsive than the resin, but less paralyzing and hypothermic; the resin is paralyzing and hypothermic exclusively and much more energetically than the alkaloid. Apart from the antithermic action of the plant, which is quite special, it seems to resemble curare in its effects.

Sulphurous-acid Fumigation in Whooping-cough.—Mr. F. E. Manby, of Wolverhampton, England ("Practitioner," August, 1888, p. 120), states that, while he can not advance such evidence of immediate cure as has been recorded by Dr. Mohn, he regards the sulphurous-acid treatment as decidedly beneficial. He says: "The method is the following: The children are in the morning put into clean clothes and removed elsewhere. All their clothes and toys, etc., are brought into their bedroom, and sulphur is burned upon a few live coals in the middle of the room. The fire is allowed to remain in the room for five hours, and then the windows and doors are thrown open. The child sleeps in the room the same evening. About twenty-five grammes (a little under an ounce) of sulphur to every cubic metre may be burned; this is equivalent to rather more than ten grains per cubic foot. The additional precaution was taken of having the day-room fumigated in a like manner during the night—the children practically lived in an atmosphere of diluted sulphurous-acid gas for some days, while in several cases I had the process repeated at the end of a week. In every instance, without exception, my observation leads me to look upon the method as a practical cure for whooping-cough. There is no doubt about it—mothers and nurses all agree with me that an immediate improvement is effected. Cough is lessened in frequency, expectoration of the thick clogging mucus much facilitated, paroxysms lessened in violence, and sickness after them as a consequence scarcely known. The children pick up quickly, and in no case has the cough lasted in its form of reduced violence more than a fortnight after the treatment commenced; it gradually, but surely, abates and ceases. I have had no specially severe bronchitic or pneumonic complications to deal with in the twenty or more cases in which I have applied the treatment, but I do not think I should desist if such complications existed. My opinion must go for

what it is worth, but I thoroughly believe that, if this method could be at all generally applied throughout the country during, say, six months from any given date, whooping-cough would become as rare a disease as the plague. The action of the sulphur must be that of a germicide, and in twenty-five years' experience I have seen nothing like such results from any other kind of treatment."

Cannabis Sativa in Exophthalmic Goitre.—Professor Valieri, of Naples (cited in the "Bull. gén. de therap.," Sept. 15, 1888, p. 237), mentions three cases of exophthalmic goitre in women, one of whom was admitted into a hospital for incurables on the 12th of June, 1884, and was discharged completely cured on the 19th of the following September. All three of the patients had exhausted the list of ordinary remedies, and only the hemp benefited them. The author says that *Cannabis sativa* must be used in doses twice as large as those of *Cannabis indica*. The most active preparations are the resin, or cannabin, obtained by Gastinet's process, the tincture, and the dried herb in the form of pastilles, tincture, or fumigation. The extracts and aqueous extracts of the shops, made from the fresh herb, are inferior. He gives four grains and a half of Gastinet's cannabin, mixed with sugar of milk, in twenty-four hours.

Electricity in the Vomiting of Pregnancy.—"Dr. Günther, of Montreux," says the "Lancet" for Aug. 25, 1888, p. 387, "mentions, in a gynaecological journal, five cases of the vomiting of pregnancy in which he found electricity of the greatest service. In none of the cases could any pathological condition of the uterus or its appendages be detected. Four of the cases were primiparæ. The remaining case was that of a woman who had had two confinements previously; in her first pregnancy she had suffered from sickness, but not in her second; in the earlier months of the latter, however, she had suffered from severe pruritus of the thighs. Some improvement only was obtainable by regulating the diet, but this was not of any long duration. Narcotics, too, had only a temporary effect. In the absence of pathological indications, we must seek for the explanation of the vomiting in the reflex action between the uterine and gastric nervous supplies, just as the tonsils are enlarged in asthma because of the relation between the cranial and gastric nerves. The female genital organs may be considered as related to other parts of the body from a vaso-motor point of view, and the occurrence of vomiting is probably sometimes to be explained from a consideration of that circumstance. In severe cases a definite degree of sensitiveness is present, and Dr. Günther believes that there is a functional neuralgia of a reflex nature. He applied the anode of a constant current in the form of a sponge, in a metal case covered with rubber, to the cervix. The cathode was a plate about four inches by five inches. This was applied over the spine, between the eighth and twelfth dorsal vertebræ. It is important to see that the current is not intermittent, and to use only one of a low strength. He commenced with two and a half to three milliampères, and never increased the strength higher than five milliampères. Each sitting lasted from seven to ten minutes. The vomiting ceased in four days, at the most, in all the cases. As some degree of nausea remained, the treatment was continued for some weeks.

Oxygen in the Capillary Bronchitis of Children.—Dr. Sinainski ("Russkaya Meditsina"; "Lancet," Sept. 1, 1888, p. 437) gives some notes of a case of capillary bronchitis in a child a year and a half old, which seemed likely to prove fatal, where oxygen exerted a rapid and beneficial effect, resulting in complete recovery. Hot baths, ipecacuanha, and emetics of sulphate of zinc, sulphate of copper, and apomorphia had been tried, but the pulse was decreasing, and the child was growing more cyanotic and breathing with more and more difficulty. Three or four inspirations of oxygen produced a marked change, the breathing becoming easier and the cyanosis disappearing. The next day the child presented quite a different aspect. Tonics, expectorants, and stimulants were given, and in about four days' time the patient had quite recovered. Dr. Sinainski thinks that in apparently hopeless cases, where there are signs that the blood is not sufficiently oxygenated, the inhalation of oxygen presents us with a means of obviating the danger arising from that source, and in that way of perhaps saving the patient's life.

Iodoformum Bituminatum.—The "British Medical Journal's" Vienna correspondent, in the issue of that journal for September 29,

1888, p. 735, says: "Iodoform, though most valuable in the treatment of cutaneous ulcers, has hitherto been attended by certain drawbacks which have prevented its coming into general use. First among these is its disagreeable smell; next, the fact that it produces toxic symptoms in some persons after a longer or shorter time; thirdly, in ulcers with undermined edges, while the base under iodoform dressing becomes quickly covered with granulations, the undermined portion does not heal, but remains as a pocket for the retention of pus which gradually burrows further beneath the skin. Dr. Ehrmann, assistant to Professor Neumann, of Vienna, after many experiments, was finally led to combine the iodoform with tar. He was led to this by the notion that the latter, being an oily substance, would diminish the volatility of the iodoform, which is evidently the chief cause of the diffuse erythema caused by that substance, and also because tar often brings gangrenous and septic ulcers into a healthy condition. After many experiments, Dr. Ehrmann finally succeeded in making a preparation in which the particles of tar and iodoform are so closely mixed that only hyaline plates can be discovered under the microscope; the characteristic crystals of the iodoform can not be distinguished at all. The preparation can be very easily pulverized, and has a spicy odor. The odor is so feeble that it is only perceptible in large quantities of the preparation, and this slight scent, which is not at all disagreeable, can be disguised by adding a small quantity of 'styrax liquidus' to the powder, and rubbing both substances together. The diseases in which Dr. Ehrmann has hitherto employed iodoform preparations are (1) soft ulcers; (2) as a dressing after the opening or excision of suppurating and strumous inguinal buboes; (3) gummatous ulcers; and (4) in ulcerations of the foot. The following is the method of application: The preparation is brushed over the part, which is then covered with a thin layer of Bruns's wadding, over which an ordinary dressing is applied. The dressing is changed every twenty-four or forty-eight hours. In soft ulcers situated over parts in which they are necessarily moistened by urine or where the suppuration is very profuse, the dressing is changed twice a day."

Iodoform in Hæmoptysis.—Chauvin and Jorissenne, of Liège ("Progr. méd.," May 19, 1888, p. 387; "Glasgow Med. Jour.," Sept., 1888, p. 259), publish a short account of the results of the administration of iodoform, at first along with tannin, afterward by itself. In the first six cases pills were given containing $\frac{1}{4}$ of a grain of iodoform and $1\frac{1}{2}$ grain of tannin. Sometimes the hæmoptysis stopped after two of these had been taken; in one severe case of advanced phthisis as many as five were given daily for three days before the bleeding ceased. In another patient, who had been in the habit of having eight or ten attacks of hæmoptysis in the year, which had been treated by large amounts of ergotine and morphine, three of the iodoform and tannin pills stopped the hæmoptysis four months before the date of the report, and there had been no recurrence. In the three cases recorded in detail, in which iodoform alone was used, the results were very similar. The authors came to the conclusion that gr. ij of iodoform daily in three pills was an appropriate dose for moderately severe cases, and that more than eight or nine pills was not required in any case they had to deal with. This action they consider quicker than that of ergotine and therefore more useful. In all the cases during the past year in which they have given it there has been no relapse, and during the treatment no disturbance of digestion.

Saccharin in Ammoniacal Urine.—At a meeting of the Royal Academy of Medicine in Ireland, the president, Dr. James Little, read a short paper ("Dublin Jour. of Med. Sci.," June, 1888, p. 493; "Glasgow Med. Jour.," Sept., 1888, p. 260) on the use of saccharin in preventing ammoniacal change in the urine. For the past three years, he said, he had seen from time to time a lady, nearly eighty years of age, who was quite confined to bed in consequence of chronic disease of the bladder, which gave rise to frequent and painful calls to pass water. The urine always threw down a copious purulent sediment, and, except when decomposition was prevented by treatment, was always ammoniacal. Phosphatic calculi had many times been passed, with great suffering, and no doubt many such existed in the bladder. Quinine and boric acid, when taken in fair doses, always purified the urine; but, about three months before, her stomach had become so irritable that these drugs could not be borne; nor could washing out of the bladder

with a weak warm sublimate solution be longer practiced, as the passage of the catheter had become exquisitely painful. The consequence was that the urine became excessively offensive. In this difficulty it occurred to Dr. Little to try saccharin, and he ordered six tabloids daily. In three or four days the urine was no longer offensive. The patient had continued their use ever since, and the urine had not again become ammoniacal, though there had been little, if any, diminution in the quantity of pus contained in it. Four other cases had been observed since. They were all in males; one was a case of catarrh of the bladder in a paraplegic gentleman; one a case of chronic cystitis, with enlarged prostate; and two cases of ammoniacal urine after stricture. In all, the saccharin had been distinctly useful, combined with the daily use of a catheter, so as to prevent the accumulation of residual urine in the bladder. Saccharin had no effect on the cystitis, except so far as the cystitis was kept up by the ammoniacal condition of the urine, and it was only in correcting that condition of the urine that it was of use.

ANSWERS TO CORRESPONDENTS.

No. 236.—It is very nearly a saturated solution.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE CARDIAC CHANGES
IN CHRONIC BRIGHT'S DISEASE.*

By ALFRED L. LOOMIS, M. D., LL. D.

GENTLEMEN: There is no more important fact to be remembered, or one which can form a safer basis for argument in our consideration of disease, than the fundamental law of self-preservation. Viewed from such a standpoint, many so-called pathological processes become physiological, in that they tend to the preservation of health and prolongation of life. It is only when an exhausted vitality, from overactivity or failing nutrition, passes into degeneration of structure, that these processes tend toward death rather than life. As the center of the entire system, the heart furnishes the most perfect illustration of this principle. So long as full nutrition is maintained, it meets every obstacle to its activity with added force, and only when its walls are weakened do we find that all of nature's pathological efforts have been put forth only to end in that evidence of exhausted vitality, cardiac insufficiency.

As one considers that it is a failing, and not an hypertrophied heart which is to be feared in Bright's as in other diseases, one can but be impressed with the fact, when comparing the opinions of various writers upon the relations of cardiac and kidney disease, that, almost without an exception, they have made little or no reference to cardiac degeneration except as secondary to hypertrophy, and dependent either upon excessive muscular strain or malnutrition from obstructed coronary arteries. Cardiac hypertrophy, on the other hand, receives marked attention, and is discussed as though it were of the utmost moment. Many most ingenious theories have been advanced to account for a process which is always conservative and compensatory, and which doubtless we would not arrest if we could, save by the removal of the condition for which it compensates, while it has almost been taken for granted that the degeneration and failure are but the epilogue to a tragedy that is almost ended. Even so late an authority as Fagge makes no mention of cardiac degeneration as one of the important changes in Bright's disease, but specifically states that "the great point to be insisted upon is that hypertrophy of the heart occurs both in parenchymatous nephritis and renal cirrhosis." Strümpell also says, "We now know that cardiac hypertrophy is not confined to contracted kidney, but that it is almost as constant in many other forms of nephritis," but he makes no mention of degeneration as a primary or secondary change. The arterial changes so often met with in chronic Bright's disease, even from the time of Bright himself, have been looked upon as important concomitants of the renal lesions, but within the past decade they have attracted so much attention as to be regarded by some as the most important part of the pathological processes. Some have gone

so far as even to speak of Bright's disease without lesions of the kidney. That compensating hypertrophy of the left ventricle is a pathological necessity of such arterial changes seems evident; and if those changes in the glandular structure of the kidneys which are usually included under the general term of chronic Bright's disease are associated with such arterial changes, cardiac hypertrophy will be a necessary part of the history.

My clinical and pathological studies during the past five years, however, have forced upon me the conviction that simple cardiac hypertrophy is not found in so large a proportion of cases of chronic Bright's disease in this country as are reported by English and continental observers; and that when it is associated with extensive changes in the glandular structure of the kidney it is due to the primary arterial rather than to the renal disease. The most constant cardiac changes which I have met with in chronic Bright's disease are dilatation of the heart cavities and degeneration of the heart walls. In most instances where I have found tubular and interstitial changes in the kidneys in addition to obliterating arteritis, cardiac hypertrophy, when present, was associated with degenerative changes in the heart walls and dilated cavities.

In those forms of renal disease in which the principal changes were in the tubes, Malpighian capsule, and connective-tissue stroma, with little obliterating change in the vessels, I have found no true cardiac hypertrophy, but rather the changes which are characteristic of a Bright's heart.

One who studies Bright's disease clinically in our large hospitals soon realizes that the heaving impulse and the increased arterial tension, which seem to be the essential features of the disease as described by many writers, are the exception rather than the rule, for in most of such cases it is difficult to determine the maximum point of cardiac impulse, it is so diffused and indistinct; and, although the cardiac area of dullness may be increased, the other signs of hypertrophy are wanting, and when, at the autopsy, a large flabby heart is found, one comes to look for other cardiac changes in chronic Bright's disease than muscular hypertrophy.

In making so broad a statement as that hypertrophy is not the characteristic cardiac change in chronic Bright's disease, it seems necessary to consider the interdependencies which have been assumed to exist between cardiac, arterial, and kidney disease, and to point out how many of them, rightly interpreted, support our present proposition.

The early supposition of Traube, that the obstruction of the renal circulation alone was sufficient explanation of the increased arterial tension and cardiac change, was but partially accepted, and was generally abandoned when the recognition of a general arterial fibrosis led to a more comprehensive understanding and explanation of the associated processes. Although the description of those pathological changes given by Gull and Sutton was shown to be incorrect, their comprehensive explanation of a general arterial disease coincident with the renal changes as the cause of the cardiac hypertrophy was fully accepted. It was even carried so far by Mahomed as the assumption that the

* Read before the Association of American Physicians at its third annual meeting.

kidney changes were either an ætiological sequence of, or simply associated, with the more important systemic condition.

Gull and Sutton, however, recognize the fact that the cardio-vascular changes vary greatly as the kidney lesions affect the vascular or tubular structures, and ascribe the hypertrophy found in parenchymatous nephritis in part to weakening of the circulation through a general œdema of the tissues and malnutrition from anæmia and uræmia, a point which I wish especially to emphasize. While high arterial tension throughout the body thus becomes the recognized cause of the cardiac hypertrophy, the explanation both of its cause and nature was various and contradictory. So long as the renal disease was regarded as primary, the arterial thickening was considered as inflammatory in character, and due simply to the direct irritation of excrementitious products in the blood upon the delicate capillary walls. When, however, the arterial disease was supposed to be primary and the kidney disease secondary, an irritation must be found elsewhere. An excessive production of uric acid, by its presence in the blood in irritating quantities, as readily explained it as did faulty eliminations; and the recognized ætiological relations of gout and the uric-acid diathesis to granular kidney thus suggested deficient hepatic functions, either inherited or acquired, as the starting-point in the chain of pathological processes which eventuate in both cardio-vascular disease and coincident granular kidney.

That such is the order of change from uric-acid, scarlatinal, alcoholic, and other systemic poisons, as maintained by Mahomed, seems indisputable. Indeed, Reigel (*"Zeitsch. für klin. Med.,"* vol. vii, p. 210, 1884) affirms that the severity and extent of the tubular change in the kidneys may be more accurately determined by the increase in arterial tension than by the amount of albumin present in the urine.

In 1886 Dr. George Johnson stated that the thickening of the arterial walls which was found in muscles, brain, and tissues, generally in connection with kidney disease, was due to an hypertrophy of the muscular coat. In this he was supported by Waller (Virchow's *"Arch.,"* 1887), who states that the change is a true hypertrophy, but not a hyperplasia. Others (Lotnischewsky, Virchow's *"Arch.,"* 1880), however, deny the presence of any muscular hypertrophy in the arteries.

Dr. Johnson's own explanation of the muscular hypertrophy—that it is due to an attempt on the part of the system to shut off from the tissues blood which is irritating by reason of being surcharged with excrementitious products—seems *a priori* untenable. The possibility of such a change, however, even when resting upon no further authority, becomes of extreme interest in connection with the more recent theory of Cohnheim concerning the cause of high arterial tension.

The two together afford an explanation of the arterio-cardiac changes in all cases when cardiac hypertrophy is secondary to kidney disease, which to our mind is more in accord with well-recognized principles of pathological processes than any which has yet been presented for our acceptance.

Briefly stated, Cohnheim's affirmation is that the circulation in the kidneys, as in all other glands, varies with the demands for their functional activity.

Recent physiology teaches that while increased blood-supply to any gland may stimulate its functional activity, stimulation of its function, whether direct or indirect, to a far greater degree increases its blood-supply. The circulation through the kidneys at any given time will thus vary directly as the proportion between the parenchymatous elements of the kidneys and the amount of excrementitious matter contained in the blood. Any diminution of the amount of glandular tissue in the kidneys at once raises the ratio between the excrementitious matters and the functional power of the kidneys. As a direct result, when the lessening of renal functioning is co-existent with retention of excrementitious material, the systemic forces generally are projected upon the kidneys in order that the total elimination may remain undiminished.

It seems but reasonable to suppose that here, as elsewhere, such a sympathetic control of a local circulation should take place through the nervous system and the muscular elements in the vessels rather than by degenerative changes and fibroid thickening. Such vaso-motor changes would not in any degree interfere with fibroid changes dependent upon direct irritation.

We thus have two widely different conditions tending to increase arterial tension, conditions which may act singly or conjointly, and affording a rational explanation of the varying amounts of cardiac hypertrophy found in apparently similar renal conditions: *First*, a general and primary arterial sclerosis, to which both the cardiac and renal changes are secondary; and, *second*, arterial as well as cardiac hypertrophy, which are as compensatory and conservative as is cardiac hypertrophy in aortic lesions.

Recently Dr. Da Costa professes to have established a connection between certain degenerative changes in the ganglionic centers and both the renal lesions and cardiac hypertrophy. Without accepting or attempting to deny his statements as to the pathological changes found in the nervous tissues, we are unable to see that he has established any causal relations between such changes and the cardio-vascular conditions. The evident clinical relations between lithæmia and both the vascular and renal changes would not seem to be affected even by allowing his views. Nearly all authorities agree that parenchymatous nephritis is far less frequently associated with cardiac hypertrophy than is cirrhosis, a fact which does not at all accord with the supposition that cardiac hypertrophy is dependent alone upon increased arterial tension secondary to retention of urea in the circulation.

Senator professes to have determined that the hypertrophy of parenchymatous nephritis is eccentric, while that of renal cirrhosis is simple or even concentric, implying a concomitant degeneration of the cardiac tissue in the former case, and an apparent rather than actual hypertrophy in the latter. It is quite well established that in many cases the fibroid changes are not confined to the arteries, but are associated with similar changes in the cardiac walls. Such examples are evidence of primary cardiac degeneration as-

sociated with the renal disease, dependent either upon the kidney lesion or upon some more general cause.

While most of the theories, as well as the clinical evidence thus adduced, seemed to be directed to establishing a cause for the arterial changes and increased tension, many of the facts presented appear to me to support the proposition that dilatation of the heart cavities with failure of the muscular power of the heart walls are, perhaps, the characteristic cardiac changes in chronic Bright's disease.

Before presenting the tabulated report upon which many of the conclusions in this paper are based, I desire to offer observations made in a series of cases that I regard as typical of the different varieties of kidney and cardiac changes which are found associated in chronic Bright's disease.

My first *observation* was made in the case of a stock broker, forty-four years of age, who applied for life insurance on the 3d of November, 1885, and was rejected upon the ground that his urine contained albumin. The following day he presented himself at my office for examination.

He stated that he had no hereditary tendencies to disease, that he had always been a generous liver, had never been ill, except with a slight attack of gout in the right great toe joint about a year before; so far as he knew, he was in perfect health.

The only evidence of disease which could be appreciated was an enlarged, forcible, and prolonged apex-beat, its maximum point of intensity being two inches below and an inch to the left of the line of the left nipple. The area of cardiac dullness extended beyond the left nipple. The first sound of the heart was prolonged, dull, distinct, and reduplicated. The second was unusually distinct. There was marked increased arterial tension, as indicated by the pulse and sphygmographic tracings; the specific gravity of his urine ranged from 1.010 to 1.016. The average daily amount passed for four consecutive days was 42 ounces. It always contained a moderate amount of albumin, but at repeated examinations no casts were found. Ten days after he came under my observation, while walking on the avenue with a friend, he fell in an unconscious state, and in a few moments was dead.

The autopsy, sixteen hours after death, revealed a large blood-clot, filling both ventricles of the brain. The heart, after its cavities were opened and emptied of blood, weighed 21 ounces. The left ventricle was markedly increased in size; its cavity was not enlarged, but its walls were greatly thickened. The middle portion of its anterior wall was an inch and a quarter in thickness. Its cut surface was of normal color and presented the appearance of healthy muscle; microscopical sections at different points showed simple muscular hypertrophy. The right ventricle was of normal size and appearance. The valves were normal, and no change could be detected in the coronary arteries. The kidneys were slightly enlarged, of an abnormally dark color, their capsules non-adherent, and their surfaces smooth. On section, the cortical substance seemed somewhat increased, but the markings were distinct. Microscopical sections, both of cortical and medullary substance, showed extensive obliterating changes in the arteries; no abnormal changes could be found in the renal tubes or in the stroma of the organs, except a moderate cell infiltration around some of the tufts. Extensive obliterating changes were found in the cerebral vessels.

A similar observation was made in the case of a janitor of an apartment house, who was admitted into Bellevue Hospital, March 5, 1886. He was forty-five years of age, and had been a

moderate drinker for twenty years, but still retained a fine physique. For the past year he had suffered with frequent and severe headaches; otherwise he had been well. Five days before admission to the hospital, while stooping, raking ashes from a furnace, he felt dizzy, attempted to rise, and fell forward; he was unconscious for thirty-six hours. When he became conscious he found it difficult to speak, and was unable to move the right side. When admitted to the hospital there was complete right-side hemiplegia, and the physical evidence of extensive left cardiac hypertrophy, but no cardiac murmur. The pulse and sphygmograph gave evidence of increased arterial tension. The specific gravity of his urine was 1.010. It contained ten per cent. of albumin and a few hyaline casts. There was slight oedema along the line of the tibia. Without any appreciable change taking place in his condition, eight days after his admission he died suddenly.

At the autopsy, twenty-four hours after death, the left lateral ventricle of the brain was found filled with a recent blood-clot, which involved the left corpus striatum. The vessels of the base of the brain, the only ones examined, showed extensive obliterating arteries.

The left ventricle of the heart was greatly enlarged; after the heart cavities were opened and emptied the organ weighed 19½ ounces. The anterior wall of the left ventricle at its middle portion was 1½ inch in thickness, and the papillary muscles were greatly enlarged; the ventricular cavity seemed of normal size. The right ventricle presented a normal appearance; microscopical sections of the walls of the left ventricle at different points showed the muscular fibers increased in size, their striæ distinct, and their nuclei enlarged; there was no connective-tissue increase. The kidneys weighed 9½ ounces; their surface was smooth, their capsules non-adherent, and on section their markings were distinct. Microscopical sections of both their medullary and cortical substance showed extensive obliterating changes in most of the renal arterioles. The tubules presented a normal appearance. There was in some of the tufts a slight amyloid change and a moderate round-cell infiltration.

These two cases are striking examples of extensive hypertrophy of the left ventricle associated with obliterating changes in most of the renal arterioles, with but slight changes in the glandular structure of the kidneys. The fact that these arterial changes were similar to those which are often found in the advanced stage of cirrhotic kidney, and were associated with similar vascular changes in other organs, furnishes a reasonable solution for the cardiac hypertrophies which are so often present with the cirrhotic kidney. Such cardiac hypertrophies are not a part of the pathological history of the tubular and structural changes which take place in the granular kidney, but belong to the general fibrosis and vascular changes which *precede their development*.

My *second observation* was made in the case of a lawyer, thirty-seven years of age, a generous liver, with a strong hereditary tendency to arterial sclerosis, his father and four of his uncles having died before sixty with cirrhotic kidneys, associated with cardiac disease and obliterating arteritis. They all had been under my medical care during life. I saw him in his first severe illness (an attack of general bronchitis) in January, 1886. At this examination I found, in addition to the evidences of bronchitis, extensive left cardiac hypertrophy unattended by cardiac murmur, but associated with very marked arterial tension. The sphygmographic tracings of high tension

were typical. The specific gravity of his urine was 1.024; it was scanty and strongly acid, and contained ten per cent. of albumin and a few hyaline casts. He complained of wandering pains in his joints, but they were not swollen or tender. Under small doses of calomel and colchicum, his diet being restricted to Vichy and milk, his bronchitis disappeared in a few days. His urine became normal in quantity, less acid, and no longer contained albumin, and the arterial tension somewhat diminished. He continued under my occasional observation for several months, and seemed quite well. Frequent examinations of his urine during this period gave negative results. The area of cardiac dullness, however, steadily increased, and the other signs of cardiac hypertrophy became more pronounced. In October, 1887, he came to me complaining of shortness of breath, and said that he had noticed for a few days that his vision was indistinct. He stated that he had been unusually well during the summer until about ten days before. After a long row, he had sat in an open boat in a strong wind fishing, had become chilled, and since had suffered from a constant and severe headache, nausea, and shortness of breath; had noticed that his face was swollen in the morning. His pulse no longer gave evidence of arterial tension, but was feeble, irregular in force and rhythm; his countenance had a languid expression, and he said that food was repulsive to him. I was astonished at the change that had occurred in his heart since my last examination. The impulse was diffused and indistinct. The area of cardiac dullness was greatly increased latterly. The first sound of the heart was indistinct and closely resembled the second in quality. His urine was scanty, specific gravity 1.026, contained 25 per cent. of albumin, epithelial and granular casts. His ankles were œdematous and his face puffy; no sign of œdema of the lungs. An ophthalmoscopic examination revealed slight neuro-retinitis. He rapidly grew worse, and six weeks after died, with the usual symptoms of acute Bright's disease. At the autopsy, eighteen hours after death, the heart weighed twenty ounces; both ventricles were markedly dilated. The walls of the left ventricle were three quarters of an inch in thickness; the right, an eighth of an inch. The cut surface of both were paler than normal and less firm. Microscopical sections of different points showed the muscular fibers of normal size, their striæ indistinct, and their nuclei granular. The connective tissue in the walls of the left ventricle was uniformly increased; the walls of the coronary arteries at their origin were somewhat thickened. The kidneys were enlarged and weighed sixteen ounces. Their surface was smooth and their capsules non-adherent. On section, their cortical substance was markedly increased and of light color. Most of the renal arterioles were thickened and at points obliterated. The epithelium of the convoluted and straight tubes and that of the Malpighian bodies was swollen and granular, and in some of the tubes detached from their walls. There was slight connective-tissue increase. The vessels at the base of the brain showed obliterating changes.

This case is an example of extensive obliterating changes in the renal arterioles associated with the characteristic changes of acute parenchymatous nephritis. With these kidney changes there was extensive cardiac dilatation, moderate thickening of the cardiac walls, and degenerative changes in the cardiac tissue. The natural explanation of these changes is that the obliterating arteritis had been gradually but progressively developing for years, the result of a strong hereditary predisposition to general arterial sclerosis. As a consequence, a compensating hypertrophy was developed. On the occurrence of the parenchymatous

changes in the kidneys the nutritive power of the blood became so diminished that all the organs and tissues of the body, especially the heart, became enfeebled, and cardiac dilatation and feeble heart was the result. How much the functional nerve disturbance caused by the attending toxæmia had to do with the heart failure I am not prepared to state.

My *third observation* was made in the case of a fireman, fifty-six years of age, of intemperate habits, who was admitted into Bellevue Hospital on the 23d of April, 1887, with extreme dyspnoea, cyanosis, and general anasarca. He stated that he first noticed swelling of his feet and face three years before; that at that time his urine was scanty and high-colored; he had nausea, vomiting, and headache. These symptoms were relieved in a few days, but afterward he was never quite well, always having some swelling of his feet and trouble with his stomach. One year ago he had an attack of pneumonia. At the time of his admission to the hospital his temperature was 99°; pulse 130, small, weak, irregular and intermitting; respirations 72. His countenance was anxious, his lips markedly cyanosed. Edema of the lower extremities extended up to the middle of the thighs. Fluids or solids taken into the stomach were immediately rejected. There were the physical evidences of general bronchitis and œdema at the base of both lungs. The cardiac impulse was diffused, feeble, and the maximum point of apex-beat could not be determined. The area of cardiac dullness was markedly increased latterly. The heart-sounds were equal in intensity and duration; there was a blowing systolic murmur at the apex. The specific gravity of his urine was 1.018, and it was completely solidified by heat. It contained blood-corpuscles, epithelial and fine granular casts.

At the autopsy, twenty-four hours after death, the heart weighed 19½ ounces; the anterior wall of the left ventricle was five eighths of an inch in thickness; all its cavities were dilated, especially the right ventricle. There were a few small atheromatous patches at the base of the aortic valves and in the walls of the aorta, which was somewhat dilated. The valves otherwise were normal. The muscular fibers of the ventricles were atrophied and granular. The walls of the coronary arteries were atheromatous and their caliber was somewhat diminished. The kidneys were typical specimens of the large white kidney. They weighed 18½ ounces, their capsules were slightly adherent, their surfaces smooth, pale, and mottled. The cortex was increased and the markings indistinct. Most of the tubules were denuded of their epithelium; some contained cast matter. The connective tissue between the tubes and around the tufts was markedly increased; the external coat of the arterioles was thickened, but there was no obliterating change in the vessels. The lungs were œdematous and the liver was fatty.

This is an example of extensive parenchymatous changes in the kidneys, with little obliterating change in the vessels, associated with dilatation of the heart cavities and degeneration of the ventricular walls, and slight atheromatous changes in the coronary arteries. The age and grossly intemperate habits of the patient were strong predisposing causes to the cardiac degeneration, but the extensive cardiac dilatation which existed was evidently due to the intra-ventricular blood-pressure which is a part of the closing history of such renal changes.

My *fourth observation* was made in the case of a merchant, sixty-eight years of age, a descendant of a long-lived race, with

no hereditary taint except gout. Fifteen years ago he came under my medical care with his first attack of gout; from that time he had periodical gouty attacks two or three times each year. Crippling of the small joints developed slowly, and was never excessive. He accustomed himself to an active out-of-door life until two years before his death. So long as he did he showed an unusual physical vigor. During the last four years of his life the signs of cardiac enlargement were slow but progressive. At no time, either by the pulse or sphygmographic tracings, was I able to detect any evidence of increased arterial tension except during and just preceding his gouty attacks. Early last summer, without any apparent cause, he began to lose weight, became pale, was troubled with insomnia, and had dyspeptic symptoms. His urine increased to sixty and eighty ounces in the twenty-four hours, was of low specific gravity (1.008 and 1.010), and contained a trace of albumin and hyaline casts. This was the first time I had ever been able to find albumin in his urine. In September he had a mild attack of gout which confined him to his room for a longer period than usual, after which he occasionally had attacks of difficult breathing. On the 1st of October he came into my office complaining of shortness of breath and pain in his chest. He said that he found it very difficult to walk from his carriage up my steps. I had not seen him for three months, and was surprised at the change that had occurred in him. He was pale and emaciated, and his countenance had a tired expression. His respirations were labored and irregular; his pulse was feeble, irregular in force, and at times intermitted; his heart impulse was feeble and indistinct. The area of cardiac dullness extended from an inch to the right to three inches to the left of the sternum. There was a distinct epigastric impulse. The first sound of the heart was indistinct, and was accompanied by a blowing murmur which was not distinctly audible beyond the ventricular area; the second sound was accentuated, and the cardiac rhythm was irregular. The area of hepatic dullness was increased two inches beyond its normal limits. There was œdema of the feet and ankles, and at the base of both lungs. His urine contained 15 per cent. of albumin, hyaline and granular casts. He passed from twenty to forty ounces in twenty-four hours. From this time he rapidly became worse, and in January died in a condition of general anasarca. At the autopsy the lungs were engorged and œdematous. The liver was large and fatty and showed interstitial changes. The heart weighed eighteen ounces, was flabby, and its cavities were all dilated, especially the right ventricle. The anterior wall of the left ventricle was three fourths of an inch in thickness. The cut surfaces of both ventricles presented a yellow hue, and were soft and flabby. Microscopical sections from different portions of their walls showed the muscular fibers fatty; the transverse striæ were almost obliterated; the connective tissue was uniformly increased. The aorta was atheromatous, and the valves, excepting a few patches of atheroma, presented a normal appearance. Atheromatous patches were scattered along the line of the coronary arteries and their caliber was somewhat diminished. The kidneys were small, weighing five ounces and a half, and presented the gross and microscopic evidences of small granular kidneys.

This is an example of extreme cardiac dilatation, accompanied by fatty, granular, and connective-tissue changes in the cardiac walls, associated with a small granular kidney. As we analyze this case, the first in the cardiac change was unquestionably hypertrophy, which for a long period was purely compensatory, but when the glandular structure of the kidneys became involved, degenerative changes in the heart muscle led to extensive dilatation and heart insuffi-

ciency, which was followed by the train of symptoms which are so often present in this class of cases.

My *fifth observation* was made in the case of a chemist, forty-two years of age, who had had three severe attacks of acute rheumatism before he was twenty years of age. I first examined him in March, 1883, when he consulted me for dyspepsia. On examination, I found a forcible apex-beat two inches below and to the left of the left nipple, with a double aortic at the base of the heart which was transmitted into the vessels and downward to the xiphoid cartilage. He gave no cardiac symptoms except a forcible heart action when excited, and occasional attacks of vertigo. Repeated examinations of his urine gave negative results. By a carefully regulated life, a simple diet, and ten drops of the tincture of digitalis twice a day, he was relieved of his dyspeptic symptoms, and after a few weeks passed from my observation. In January, 1886, I saw him again, when he was suffering with extreme dyspnoea and had considerable œdema of his lower extremities. I found the apex-beat less forcible and farther to the left than at my previous examination. There was a distinct epigastric impulse, with marked pulsation of the carotids and subclavian vessels. A blowing systolic murmur was heard at the apex and transmitted to the left, and a loud gushing diastolic murmur was heard at the base and transmitted along the vessels. Any sudden exertion caused giddiness and faintness. There were fine moist râles at the base of both lungs, and he was unable to sleep except in a sitting posture. His urine was scanty and high-colored, with a specific gravity varying from 1.015 to 1.024, and contained 10 per cent. of albumin, hyaline and granular casts. He steadily grew worse, his dyspnoea becoming more constant and severe, and, in a condition of general anasarca, he died from heart insufficiency the 6th of the following March. At the autopsy the aortic valves were found thickened, contracted, and fringed with warty excrescences; the anterior leaf of the valve was ruptured and the ruptured edge was studded with recent vegetations. The mitral orifice was surrounded with vegetations; the valves were thickened, and presented a funnel-shaped prolongation on their auricular surface. One of the chordæ tendineæ was broken across at its valvular attachment. The heart weighed twenty-two ounces and a half. The walls of the left ventricle and auricle were thickened and showed evidences of interstitial myocarditis. All the cardiac cavities were dilated, especially the right ventricle. The lower portion of the right lung was the seat of cardiac pneumonia. The liver was enlarged and firm. The kidneys were of a pale-red color and weighed sixteen ounces; their surface was smooth, their capsules slightly thickened, but not adherent. On section, the cortex was thickened, the markings distinct, the pyramids of an unusually dark color. The cortex tubes were dilated, their epithelium swollen, granular, and detached. The arteries of the medullary and cortical substance were enlarged and thickened, and there was an extensive growth of new tissue diffused through the cortex.

This is an example of extensive valvular disease with hypertrophic dilatation of the heart associated with large white kidneys. From the history it seems evident that the kidney changes were secondary to the cardiac. The enlargement and thickening of the renal arteries would be sufficient to suggest such a connection without the history.

In connection with the foregoing observations, I have endeavored to present, in tabulated form, the renal, cardiac, and vascular changes which were found at the autopsies of forty cases of chronic Bright's disease.

TABLE OF KIDNEY, CARDIAC, AND VASCULAR CHANGES IN CHRONIC BRIGHT'S DISEASE.*

Name.	Age.	Habits.	Duration of disease.	Mode of death.	KIDNEY.			HEART.			VASCULAR, ETC.			
					Wt.	Macroscopical.	Microscopical.	Wt.	Meas.	Cavities and valves.	Coronary art.	Microscopical.	Aorta.	Lungs, etc.
James McH. (1)	35	Hard drinker; rheumatism 1 yr. ago; lead colic.	18 mos.	Coma; meningitis.	Right 4 ozs.	Capsule thickened and adherent; surface granular; cortex diminished in thickness; markings absent.	Epithelium of tubes granulo-fatty, most marked in convoluted portion; tubes dilated and tortuous; connective tissue increased; some glomeruli show amyloid degeneration.	14 ozs.	Right ventricle, $\frac{1}{2}$ in.; left ventricle, $\frac{1}{4}$ in.	Cavities somewhat dilated; aortic valves thickened & slightly incompetent.	Normal	Muscular fiber normal in size, but granular; nuclei indistinct.		
Harriet W. (2)	39	Unknown.	Exact period not known.	Sudden.	Both, 6 ozs.	Color deep red; capsule slightly thickened, and, at points, adherent; surface smooth; cortex normal thickness; markings distinct.	Slight degeneration of the tubular cells; round-celled infiltration, about glomeruli particularly; general passive congestion.	18 ozs.	Rt. v. $\frac{1}{2}$ in.; left v. 1 in.	Cavities somewhat dilated, excepting left auricle; surface showed evidence of old pericarditis; slight atheroma of mitral; endocardium of ventricles opaque; col. carn. fibrous.	Thickened walls and diminished lumen.	Transverse markings deficient; nuclei obscured; fibers granular & fatty; great increase of fibroid material, showing in places as a dense network of fibrous tissue.	Atheromatous patches	Lungs slightly emphysematous; old pleuritic thickenings and adhesions over both lungs.
John M. (3)	48	Not known; said he had been a moderate drinker.	3 years out of health; anasarca 6 weeks before death.	Coma.	Both, $6\frac{1}{2}$ ozs.	Reduced in size; surface uneven; capsule slightly thickened and adherent; color pale; cortex increased in thickness, while medulla is diminished.	Malpighian capsules filled with amyloid material; stroma slightly increased; interlobular and arcade vessels amyloid.	12 $\frac{1}{2}$ ozs.	Rt. v., $\frac{3}{4}$ in.; left v., $\frac{1}{2}$ in.; covered with fat.	Cavities not markedly dilated; valves competent.	Normal	Muscular tissue normal.	Aorta dilated, admitting 3 fingers.	Lungs cedematous.
Martha L. (4)	20	Temperate; gouty.	1 year.	Convulsions and coma; anasarca.	Both, $5\frac{1}{2}$ ozs.	Size below normal; lobulated on surface; capsule markedly thickened.	Bowman's capsules thickened, and contained amyloid material; medium-sized arteries thickened; collecting tubes contained hyaline material.	17 ozs.	Left v., $\frac{1}{2}$ in.	No dilatation of cavities; valves competent though edge of mitral slightly thickened; acute endocarditis.	Normal	Muscular fiber of left ventricle increased in size.	Aorta below normal size.	Lungs engorged and cedematous
Catherine R. (5)	66	Temperate.	2 years.	Pneumonia, heart failure, edema of feet & ankles.	Both, 7 ozs.	Capsule thickened and adherent; surface granular; color deep red; cortex diminished in thickness.	Stroma increased, mostly near capsule; epithelium of proximal convoluted tubes in condition of granular degeneration; outer walls of vessels thickened.	13 ozs.	Rt. v., $\frac{1}{2}$ in.; left v., $\frac{1}{4}$ in.	Ventricular cavities greatly dilated; the left most marked; tricuspid thickened.	Atheromatous; lumen diminished.	Muscular fiber granular and fatty, and contained brown pigment; connective tissue increased.	Atheromatous; walls thickened.	Upper half of rt. lung in 2d stage of acute lobar pneumonia; liver atrophied, fatty.
John E. (6)	49	Grossly intemperate.	1 year.	Found dead in bed.	Rt., 4 ozs.	Pale; capsule non-adherent; cortex diminished; markings poorly shown; medulla engorged.	Advanced parenchymatous degeneration, with small amt. only of c. tissue increase; all arteries above interlobular in size, oblit. endart.; thickening of intima, particularly in smaller vessels.	13 $\frac{1}{2}$ ozs.	Left v., $\frac{1}{2}$ in.	All cavities dilated; all valves with atheromatous patches.	Atheroma.	Muscular fiber fatty, with intermuscular connective tissue increase.	Atheroma (slight).	
James W. (7)	38	Temperate.	3 mos.	Convulsions.	Both, $6\frac{1}{2}$ ozs.	Capsule strongly adherent; cortex diminished; markings indistinct.	Tubular epithelium extensively degenerated; intertubular tissue increased; blood-vessels thickened; adventitia.	14 ozs.	Rt. v., $\frac{1}{2}$ in.; left v., $\frac{1}{2}$ in.	Cavities slightly dilated; columnar fibrous.	Walls apparently thickened.	Interstitial myocarditis; muscular fiber atrophied.	Walls thickened; caliber diminished.	Lungs engorged with blood, and cedematous; c. tissue increase in the liver.
Dennis M. (8)	39	Moderate drinker; one attack of rheumatism 1 yr. ago.	18 wks.	Right side, pleurisy; sudden; of heart failure.	Both, $5\frac{1}{2}$ ozs.	Capsule adherent; cortex diminished; markings indistinct.	Epithelium of tubes granular, with desquamation in places; hyaline plugs in many convoluted tubes; c. tissue increased; round-celled infiltration; arterioles show oblit. g. endarteritis.	16 ozs.	Rt. v., $\frac{1}{2}$ in.; left v., $\frac{1}{2}$ in.; old pericardial adhesions.	Rt. v. dilated; left v. normal; valves competent.	Walls thickened.	Fiber small; strie indistinct; nuclei obscured; adipose betw. fibers in abnormal amount.	Not included in autopsy record.	Left pleural cavity filled with fluid; right lung cedematous; liver fatty.
Patrick C. (9)	50	Hard drinker; No syph. taint.	1 year.	General anasarca; pulmonary edema.	Both, 7 ozs.	Surface granular; capsule adherent and thickened; cortex diminished; markings irregular; color pale.	C. tis. slightly increased beneath capsule; parenchyma in advanced condition of degeneration; arterioles showed obliterating endarteritis—a few were amyloid.	13 ozs.	Rt. v., $\frac{1}{2}$ in.; left v., $\frac{1}{4}$ in.	All cavities dilated; slight atheroma of aortic semilunar.	Walls thickened; caliber diminished.	Muscular fiber diminished in size; strie faint; c. tissue slightly increased; much adipose betw. bundles.	Cerebral arteries atheromatous.	Liver cirrhotic; fibrous stroma increased.
John N. (10)	52	Moderate drinker.	6 wks. last illness; total duration heart failure.	General anasarca; sudden; heart failure.	Both, 8 ozs.	Surface smooth & mottled; capsule non-adherent, excepting at a few points, and not thickened.	Stroma normal, except beneath capsule, where it was slightly increased; epithelium degenerated; granular casts in tubes; vessels normal.	16 ozs.	Rt. v., $\frac{1}{2}$ in.; left v., $\frac{1}{2}$ in.	Cavities much dilated; aortic valves thickened & slightly inefficient.	Normal.	Fibers atrophied; nuclei obscured; strie indistinct; c. tis. increased.	Normal.	Left, pleuro-pneumonia; liver, passive hyperemia.
Marcus D. (11)	22	Temperate.	9 wks. (last illness).	General anasarca.	Both, 7 ozs.	Color dark; surface smooth; cortex thickened; markings distinct.	Round-celled infiltration about Malpighian bodies; epithelium in advanced state of granulo-fatty degeneration; extravasation into collecting tubes at points.	10 ozs.	Normal.	Both normal.	Normal.	Muscular fiber atrophied; strie indistinct; nuclei prominent; increase of intermuscular c. tissue.	Normal.	Liver, marked passive congestion.
Martin B. (12)	66	Temperate.	2 yrs.	10 days previous to death became hemiplegic; coma.	Both, $6\frac{1}{2}$ ozs.	Capsule thickened and adherent; color dark red; cortex greatly diminished.	Cortical tubules largely obliterated by c. tissue; blood-vessels show thickened walls and diminished, often obliterated, lumen.	10 ozs.	Rt. v., $\frac{1}{2}$ in.; left v., $\frac{1}{2}$ in.	Cavities greatly dilated; organ soft and flabby; valves showed spots of atheroma.	Atheromatous at points nearly obliterating lumen.	Muscular fiber of left vent. shows rows of oil globules, instead of normal parenchyma; strie invisible.	Aorta atheromatous and slightly dilated.	Lungs engorged; liver enlarged, fatty; brain not exposed

* The measurements for thickness of the cardiac ventricular walls have been taken anteriorly, just below the auriculo-ventricular groove. The tissue, in every instance, has been hardened in Müller's fluid, followed by alcohol.

TABLE OF KIDNEY, CARDIAC, AND VASCULAR CHANGES IN CHRONIC BRIGHT'S DISEASE.—Continued.

Name	Age	Habits.	Duration of disease.	Mode of death.	KIDNEY.			HEART.				VASCULAR, ETC.		
					Wt.	Macroscopical.	Microscopical.	Wt.	Meas.	Cavities and valves.	Coronary art.	Microscopical.	Aorta.	Lungs, etc.
John O'N. (13)	41	Intemperate.	Well until 3 m. ago; edema of feet.	Sudd'n; coma.	Both, 7 ozs.	Somewh'tenlarg'd; color dark-red; surface smooth.	Arteries showed extensive obliterating endarteritis; parenchyma and stroma normal.	18 ozs.	Rt. v., $\frac{1}{2}$ in.; Lt. v., $\frac{1}{4}$ in.	Both normal.	Slight thickening.	Muscular fiber increased in diam. and granular; striae not demonstrable; nuclei large & granular; some intermusc. fat.	All large blood-vessels thickened.	Lungs engorged and edematous; liver slightly cirrhotic; brain not examined.
Julia E. M. (14)	38	Temperate.	18 mos.	Sudd'n; edema of lower limbs.	Right $3\frac{1}{2}$ ozs.	Pale; capsule non-adherent; cortex dim.; markings lost; pyramids congested at their base.	Parenchyma in advanced granulo-fatty change, with fibrous tissue increase; small and medium vessels obliterated by increase of intima.	13 $\frac{1}{2}$ ozs.	Lt. v., $\frac{1}{2}$ in.	All cavities dilated; slight vegetations upon semilunar valves.	Atheromatous.	Muscular fiber small; nuclei poorly shown; striae very indistinct; much intermusc. fat.	Slight atheroma.	Spleen present; large infarcts.
James H. (15)	44	Intemperate.	First symptoms noticed by patient 5 wks. before death.	Syncope on rising; general anasarca.	Right 2 ozs.; left, $\frac{1}{2}$ ozs.	Left kidney, surface smooth; capsule slightly thick'd; cortex dimin'd; markings indist.; right resembles the left in general appearance.	Advanced granular and fatty change in tubules; stroma slightly increased; vessels showed obliterating changes.	17 $\frac{1}{2}$ ozs.	Rt. v., $\frac{1}{2}$ in.; Lt. v., $\frac{1}{2}$ in.	Tricuspid orifice admits four fingers; valves normal.	Thickened; lumen diminished.	Muscular fibers increased in size; striae lost; nuclei indistinct; diffuse c. tissue increase.	Atheroma in small patches only.	Liver cirrhotic; brain not examined.
Thomas K. (16)	43	Temperate.	Last illness 4 wks.	Gangrene of left thigh; general anasarca; coma.	Right $\frac{1}{2}$ ozs.	Capsule non-adherent; surface smooth and very pale yellow.	Tubes generally denuded of epithelium; c. tissue normal.	14 $\frac{1}{2}$ ozs.	Large; walls thin; no meas. taken.	Cavities much dilated; valves normal.	Normal.	Fiber in advanced and typical fatty degeneration.	Normal.	Serous cavities all contain'd much fluid; liver fatty.
John M. (17)	46	Moderate drinker.	6 mos.	Sudd'n; slight hemiplegia.	Right $\frac{1}{2}$ ozs.	Capsule adherent; markings normal.	Tubular epithelium normal; slight round-celled infiltration in places; endarteritis oblit. very general.	17 ozs.	Rt. v., $\frac{1}{2}$ in.; Lt. v., 1 in.	No changes in cavities or valves.	Normal.	Muscular fiber increased in size; nuclei large.	No change in large vessels; sm. arteries show atheroma.	Blood-clot in right lateral cerebral ventricle.
William O. (18)	47	Intemperate.	1 week.	Acute alcoholism; collapse.	Right $\frac{1}{2}$ ozs.	Capsule non-adherent; cort. slightly dimin.; markings fairly shown	Epithelium normal; c. tissue increased around small arteries only.	8 $\frac{1}{2}$ ozs.	Left v., $\frac{1}{2}$ in.	Left v. greatly dilated; valves normal.	Patches of atheroma.	Slight pigmentation of muscular fibers.	Patches of fatty change.	Lungs, acute mil. tuberculosis; passive congestion of liv.
Clara L. (19)	35	Intemperate.	Unknown.	Uraemia; coma.	Both, 14 ozs.	Greatly enlarged; capsule adherent; cortex increased; markings obliterated; intense engorgement.	Tubes largely denuded of their lining cells; round-celled infiltration; no arterial change.	14 ozs.	Left v., $\frac{1}{2}$ in.	Ventricles dilated; valves normal.	Atheromatous patches.	Muscular fibers normal.	Normal.	Liver hypertrophic; cirrhosis.
John S. (20)	36	Temperate.	Unknown.	Asthenia.	Right $\frac{1}{2}$ ozs.	Cortex diminished; markings indistinct.	Free borders of cells denuded; no other changes.	10 ozs.	Not meas. no abnormal observed.	Both normal.	Normal.	Normal.	Normal.	Lungs, fibriloid phthisis.
James W. (21)	38	Intemperate.	1 year.	Sudd'n; under ether.	Rt., 4 ozs.	Normal appearance.	Ext. coat of small arteries markedly thickened.	9 ozs.	Lt. v., $\frac{1}{2}$ in.	Left v. dilated; valves competent.	Minute branches atheromatous.	Extensive interstitial myocarditis.	Atheroma.	Abscess of liver; dysenteric ulcers.
Sarah H. (22)	23	Temperate.	18 mos.	Asthenia.	Rt., 5 ozs.	Markings indistinct; capsule slightly adherent; cortex thickened.	Fatty degen. of tubular cells, particularly free borders of those lining convoluted tubes.	8 $\frac{1}{2}$ ozs.	Lt. v., $\frac{1}{2}$ in.	All cavities dilated; valves competent.	Patches of fatty degeneration.	Well-marked fatty degeneration of muscular fiber.	Normal.	Acute mil. tuberculosis; both lungs; right, pleurisy; old.
Samuel S. (23)	45	Intemperate.	Unknown.	Coroner's case.	Rt., $\frac{1}{2}$ ozs.	Cortex diminished; capsule adherent; markings indistinct.	Two tubular cells remaining; c. tissue increased; ext. walls of arteries thickened.	20 ozs.	Lt. v., $\frac{1}{2}$ in.	Left v. extensively dilated; mitral atheromatous.	Atheroma.	Fibers atrophied and, in places, granular.	Atheroma.	Liver fatty.
James D. (24)	42	Intemperate.	Unknown.	Sudd'n; on street; coroner's case.	Rt., $\frac{1}{2}$ ozs.	Capsule slightly adherent; cortex dimin'd; markings distinct.	C. tissue increased especially around tufts and sm. arteries; no change in tubular epithelium.	10 ozs.	Lt. v., 1 in.	No dil. of cavities; valves competent.	Normal.	Fibers hypertrophied; otherwise normal.	Normal.	Hæmatoma of brain.
Sarah U. (25)	30	Temperate.	Last sickness, 6 mos.	Coma.	Rt., $\frac{3}{4}$ ozs.	Capsule adherent in patches; cortex slightly dim.; markings indistinct.	Thickening of adventitia of small arteries; no parenchymatous degeneration.	9 ozs.	Lt. v., $\frac{1}{2}$ in.	Lt. v. small; valves competent.	Atheromatous patches.	Fatty degeneration of muscular fiber.	Slight atheroma.	Edematous
James C. (26)	44	Generous liver; gouty.	2 yrs.	Coma.	Rt., 5 ozs.	Dark-red, smooth; capsule non-adherent; cortex slightly thick'd; markings distinct.	Slight round-celled infiltration about glomeruli; vessels in state of oblit. endarteritis.	19 ozs.	Lt. v., $\frac{1}{2}$ in.	Normal.	Normal.	Fibers coarse; striae somewhat indistinct.	Normal.	Obl. changes in cerebral vessels; clot in both lateral ventricles.
William S. (27)	45	Moderate drinker.	1 year.	Sudd'n; hemiplegia.	Rt., $\frac{1}{2}$ ozs.	Surface smooth; capsule non-adherent; markings distinct.	Parenchyma normal; few waxy tufts; slight round-celled infiltration; marked obliteration of arteries by thickening of intima.	18 $\frac{1}{2}$ ozs.	Lt. v., $\frac{1}{2}$ in.	Cavities generally dilated and left v. markedly increased; valves competent.	Normal.	Fibers much increased in size; striae sharp and distinct; nuclei large.	Atheroma (slight).	Blood-clot in left lat. vent.; cere. ves. generally sent of obliterating changes.
Henry R. (28)	37	Moderate drinker; history of cardiac.	13 mos.	Sudd'n; general anasarca.	Rt., 7 ozs.	Smooth; capsule non-adherent to cortex; pale and thickened.	Parenchyma granular and often detached; slight round-celled infiltration; lumen of arterioles diminished.	20 ozs.	Lt. v., 1 in.	Cavities all dilated.	Atheromatous.	Fibers normal size; striae distinct; nuclei granular; c. tis. increased.	Atheroma.	Cerebral arteries greatly thick'd (oblit. endart.).
Richard B. (29)	68	Intemperate.	4 yrs.; gouty attacks for 15 years.	Coma; pul. edema.	Rt., $\frac{3}{4}$ ozs.	Small; capsule adherent; cortex dim.; surface granular.	Larger arteries showed thick'd intima and adventitia; advanced parenchym. degen.; c. tis. betw. tube increased.	11 ozs.	Lt. v., $\frac{1}{2}$ in.	Cavities all dilated.	Atheroma; caliber diminished.	Fibers granular & fatty; striae and nuclei indistinct; c. tis. increased.	Atheroma.	Liver fatty and cirrhotic.
John S. W. (30)	53	Intemperate.	10 yrs.	Sudd'n; pul. edema.	Rt., 7 ozs.	Surface smooth; color deep red; old and recent infarcts; markings normal.	Parenchyma granular; increase of middle coat of small arteries.	23 ozs.	Lt. v., $\frac{1}{2}$ in.	Cavities all dilated.	Atheroma (slight).	Musc. in marked degree of fatty degeneration.	Atheroma (slight).	Infarct in lower lobe of lungs.

TABLE OF KIDNEY, CARDIAC, AND VASCULAR CHANGES IN CHRONIC BRIGHT'S DISEASE.—*Concluded.*

Name	Age	Habits.	Duration of disease.	Mode of death.	KIDNEY.			HEART.				VASCULAR, ETC.	
					Wt.	Macroscopical.	Microscopical.	Wt. Meas.	Cavities and valves.	Coronary art.	Microscopical.	Aorta.	Lungs, etc.
John M. (31)	42	Temperate.	Acute rheumatism 10 yrs. ago.	Sudden.	Both kidneys weigh 9½ ozs.	Surface smooth; capsule slightly thickened, but non-adherent; cortex thickened; markings distinct; pyramids dark.	Tubules dilated; epithelium swollen, granular, and in places detached; arterioles show thickened walls; connective tissue generally increased.	20½ Lt. v., 4 ozs. ½ in.	Cavities all dilated, and especially the rt. v.; aortic valves fringed with warty excres.; ant. leaflet rupt.; mitral opening surrounded with vegetations; 1 of the chordae tend. broken; all valves mark. thick.	.....	Intermuscular c. tis. increased; muscular fibers in condition of fatty degeneration.	.....	Liver: passive hyperemia. Lungs: brown induration & edema.
Jennie S. (32)	12	Temperate.	14 mos. scarlet fever 18 mos. ago.	Sudden; Right diabetic coma.	Right ½ ozs.	Surface granular; color pale (mottled) red; pyramids engorged at base.	Marked round-celled infiltration; parenchyma granulo-fatty, with free borders generally wanting; obliteration of arteries by thickening of intima.	6 Lt. v., ½ ozs. ½ in.	Cavities all dilated; valves competent.	Normal	Muscle fatty; nuclei faintly shown; striæ almost obliterated.	Normal	Pulmonary edema; diabetes.
Th'mas P. (33)	40	Intemperate.	2 yrs.; history of heart disease.	Coma.	Rt., 4½ ozs.	Capsule adherent; surface pale, granular; cortex diminished; markings indistinct.	Tubules of cortex dilated and tortuous, with granulo-fatty cells, often detached and forming plugs in lumen; c. tissue greatly increased; intima and adventitia of vessels increased.	17 Lt. v., ½ ozs. ½ in.	Cavities all dilated; valves competent, excepting for two fenestræ in one cusp of aortic valve.	Normal as to size and gross appearance.	Muscular substance showed fatty degeneration.	Normal	Pulmonary engorgement.
Benjamin S. (34)	41	Grossly intemperate.	2 yrs.	Coma.	Rt., 5½ ozs.	Color intense red; capsule thickened and adherent, excepting at a few points.	Markings fair, excepting when bands of c. tissue pass from capsule to pelvis; parenchyma extensively granulo-fatty altho' cells all intact; muscular media of large arteries increased and amyloid; many glomeruli, also waxy.	12½ Lt. v., ½ ozs. ½ in.	Cavities all increased; valves competent; very slight roughening of endocardium covering aortic cusps.	Lumen diminished.	Muscular fiber granular; nuclei and striæ indistinct.	Normal	Right lung solid from lobar pneumonia.
Anson W. (35)	44	Intemperate at rare intervals only.	10 mos.	Convulsions after exposure during 'spree.	Rt., 5½ ozs.	Color red; surface uneven; capsule thickened and adherent; cortex diminished.	Extensive degeneration of tubular cells; many tubes obliterated; c. tissue much increased; many tufts waxy; external coat of arteries thickened.	16 Lt. v., ½ ozs. ½ in.	Cavities much dilated; valves normal.	Normal	C. tissue much increased; fatty degeneration of muscular fibers.	Dilated.	
Freeman H. (36)	56	Grossly intemperate.	4 yrs.	Coma.	Rt., 7½ ozs.	Surface smooth; capsule adherent, slightly; cortex much thickened; markings indistinct.	Tubules very generally denuded of cells; c. tissue greatly increased; external coat of arteries increased.	20 Lt. v., ½ ozs. ½ in.	Cavities dilated, particularly the right vent.; valves competent.	Atheroma; caliber diminished.	Muscular fiber granular and atrophied.	Dilated.	Lungs edematous.
Julius P. (37)	39	Temperate.	15 mos.	Convulsions; edema of legs.	Rt., 6½ ozs.	Surface granular; pale; cortex increased; capsule non-adh.; markings fair; base of Malpigh. pyr. engorged w. blood.	Convulsed tubes dilated; epithel. almost all wanting; extensive round-celled infiltration; blood in collecting tubes; external coat of large arteries much thickened.	12½ Lt. v., ½ ozs. ½ in.	Cavities all dilated; valves all competent.	Atheroma.	Fibers small; nuclei clear; protoplasm granulo-fatty.	Atheroma.	Atheroma of basilar artery.
Adam B. (38)	47	Intemperate.	2 yrs.	Sudden	Both 14 ozs.	Cortex slightly diminished; capsule adherent; markings indistinct; color deep red.	C. tissue increased about tufts, and around small arteries; parenchymatous degeneration.	20 Lt. v., ½ ozs. ½ in.	Left v. dilated; valves normal.	Normal	Muscle fiber in condition of fatty degeneration, not evenly distributed, however.	Atheroma.	Liver: hypertrophic cirrhosis.
Thos. C. (39)	45	Always been a "before breakfast drinker."	5 mos.	Sudden	Both 9 ozs.	Small; color red; cortex diminished; capsule adherent; markings poorly shown.	Interstitial and parenchymatous nephritis; obliterating endarteritis well marked.	8½ Lt. v., ½ ozs. ½ in.	Left v. dilated; valves normal.	Atheroma.	Interstitial myocarditis, with fatty degeneration.	Atheroma.	Pulmonary edema; liver cirrhotic.
Jennevra A. (40)	42	Temperate.	2½ yrs.	Coma.	Rt., 3 ozs.	Small; deep red; cor. diminished; fibrous bands projected from capsule; small infarcts throughout	Excreting epithelium largely absent; c. tissue much increased, with thickening of outer coat of arteries; sm. arteries amyloid.	11 Lt. v., ½ ozs. ½ in.	Left v. dilated; valves competent; with abscess in anterior wall of left ventricle.	Atheromatous; with many sm. extravasa.	Slight increase of con. tissue; mus. fiber large and granular; nuclei prominent.	Atheroma.	Inactive tubercular nodule at right pulmonary apex.

In these tables will be found most of the varieties of kidney lesions usually present in this disease. Twelve were studied as private patients during a considerable period before death, with a definite purpose of endeavoring to ascertain the relationship, if any exist, between the renal and cardiac changes. The remainder were hospital patients, the records of which were made under my direction. All examinations were made in the same way, and a uniform method was pursued in preparing and staining the microscopical sections. In eight cases a microscopical examination of the kidneys, heart, and vessels of the brain was made. In thirty-two cases the examination was limited to the kidneys and heart. An analysis of these cases readily

groups them according to features described more or less minutely, as follows:

1. In eleven cases the vaso-renal changes seemed confined to the adventitia. It is true that frequently no sharp line of demarkation can be demonstrated between the external coat of the vessels and the interstitial or sustentacular tissue of organs, and this is especially true of the *arcade arteries* of the kidney. The smaller vascular branches do not present the same difficulty. No case has been placed under this head except those in which the line appears well established in consequence of the difference in the age of the respective tissues.

2. In twelve cases the intima alone was involved.

3. Special reference has been made in five instances of thickening of the muscular media of the smaller vessels or renal arterioles.

4. In six cases the vascular lesions were not accompanied by changes in the glandular structure of the kidneys.

5. In four cases there were the tubular changes of parenchymatous nephritis with little change in the vessels.

6. In ten cases the changes were mainly in the connective-tissue stroma and the adventitia of the vessels.

7. There were twenty-four cases in which the cardiac walls were thickened, and twenty-nine in which the heart muscle had undergone some form of degeneration; three cases exhibited no degenerative change in the cardiac muscle in connection with extensive hypertrophy of the cardiac walls. In these cases the renal changes were confined to the vessels.

8. In twenty cases the heart muscle showed degenerative changes accompanying the hypertrophy. In these cases tubular and stroma changes in the kidneys were associated with obliterating changes in the vessels.

9. In four cases, cardiac dilatation and degeneration were accompanied by marked thickening of the cardiac walls.

10. In seven cases the heart was not hypertrophied, or the walls but slightly thickened, notwithstanding there were extensive obliterating vascular changes in the kidneys.

11. Of the twenty-nine cases of fatty and granular degeneration of the cardiac muscle, twenty-seven showed degeneration of the renal epithelium.

12. Of the twenty-four cases of cardiac hypertrophy, twenty-two showed obliterating changes in the renal vessels.

13. The arteries in the forty cases show in thirty instances some form of obliterating change.

14. In twenty-two cases obliterating change in the arteries was associated with renal epithelial degeneration.

15. Granulo-fatty degeneration of the heart is found in twenty-nine instances. In twenty-four this is accompanied by obliterating changes in the renal vessels.

16. Of the twenty-four cases of cardiac hypertrophy, twenty are accompanied with degeneration of parenchyma of the kidneys.

A general review of my cases fairly indicates the following conclusions:

As a rule, the more extensive the obliterating changes in the renal arterioles, the greater the degree of cardiac hypertrophy. I have been impressed by the distinct relations which one seems to bear to the other. In the few cases in which cardiac hypertrophy was not present with the obliterating changes in the arteries, the general nutritive condition was markedly faulty. In two instances of drunkards, although the kidneys were extensively granular and the arterioles much thickened, no evidence of hypertrophy existed, although the dilatation was excessive. Even in the cirrhotic kidney the primary cardiac hypertrophy has no necessary connection as cause and effect with the kidney changes, but both are a part of the general fibrosis which has its origin in a fibroid diathesis, either hereditary or acquired, the hereditary influences being far stronger than the acquired. In two cases where the cardiac hypertrophy was most extensive, the only change found in the kidneys was obliterat-

ing arteritis in the renal vessels. In the other varieties of Bright's disease the heart changes seemed to be directly dependent upon the renal disease, or rather upon the toxæmia and faulty nutrition which results from them; the evidence of this faulty nutrition was shown first and most markedly by changes in the heart walls and cavities.

In all forms of chronic Bright's disease increased arterial tension and more or less compensating hypertrophy is an early phenomenon. In the cirrhotic it is usually gradual in its development, in some cases extending over years, but in all instances, when the period is reached at which the renal symptoms clearly establish interference with the functional anatomical elements of the kidney, a feeble heart action and diminished arterial tension will indicate degenerative cardiac changes. When once the period of tension is passed, it can never be re-established, except temporarily by the action of certain drugs.

Synchronously with the failure of heart power, changes occur in the venous blood system, which give rise to many of the distressing symptoms which are present in the advanced stage of so many cases of Bright's disease. There seems to be no fixed or uniform relation between the character and extent of the changes in the glandular structure of the kidneys and those in the renal and systemic vessels; the changes observed in the vessels of the pia mater, however, were usually less in degree than those in the kidney. In all cases where advanced cirrhotic changes in the kidneys existed the ventricular cavities were dilated. In cases of extensive dilatation, with little or no thickening of the cardiac walls, some form of degeneration of the muscular tissue existed. If the cardiac substance was soft and flabby, the fibers were granular, their nuclei obscured, and their striæ more or less obliterated, with a loss of consistence which allowed them easily to break down when an attempt was made to separate them. The papillary muscle of the mitral valves was frequently the seat of fibroid change, their columns having lost their fleshy appearance and assumed that of tendinous cords.

The edges of the flaps of the mitral valves were not infrequently found slightly thickened, but the evidences of acute endocarditis, secondary to the renal disease, were present in but one of my cases, while slight thickening and induration at the base and tip of the valves, indicating interstitial endocarditis, were present in a few cases.

Sudden heart failure accompanied by dilatation, secondary to cirrhotic kidneys, are sometimes regarded during life as cases of mitral regurgitation on account of the presence of a loud systolic apex murmur; but in no instance did I find at the autopsy evidence of mitral lesions in such cases. Clinical experience teaches that rheumatic valvular disease of the heart may remain latent for many years, during which the heart will perform its functions with efficiency; if, however, renal disease supervene in such a case, its effects are most disastrous, as is evidenced by my sixth case, for the valvular lesions which had remained latent so many years in this case became pronounced under the strain on the circulation which was produced by the complicating renal disease, and led rapidly to the development of the distressing symptoms of heart insufficiency. The association

of valvular affections of the heart with Bright's disease has been sharply insisted upon by many observers. On the one hand, the kidney disease has been alleged to be the cause of the cardiac affection; on the other, valvular lesions have been asserted to be the cause of the renal disease. In only three of my tabulated cases were valvular lesions found which could be regarded as secondary to the kidney disease.

The great discrepancy in the statistics given by different observers in regard to the frequency of the valvular disease as a cause of Bright's kidney is my excuse for presenting the following statistics taken from the records of Bellevue and Roosevelt Hospitals.

While it is but fair to admit that hospital records are more or less unsatisfactory when searched with a view of determining any definite point, I think I can justly say that these records present as fair a basis of comparison as similar reports from other hospitals. The method employed was to take every case of heart disease recorded for a certain period, omitting only those cases of combined cardiac and kidney disease in which there was no evidence of the cardiac lesion having been primary.

A total of one hundred and sixty-four cases was thus gathered. Of this number, forty-three were complicated by evidences of Bright's disease, as shown by the presence of albumin and casts in the urine, or in 20 per cent. of all the cases.

In thirty-five of the forty-three cases there was a history of chronic cardiac disease extending over periods of from one to twenty-five years. Thus, making all due allowances, it seems to me that these cases evidence a much closer relation between valvular disease of the heart and secondary disease of the kidneys than is usually given in hospital statistics.

Three cases included in my tables are well-marked examples of the usual kidney changes found in such cases. In all, the kidneys were enlarged, and, in addition to the usual changes which are found in the large white kidney, the arteries were thickened and dilated; in each of these cases there was right heart insufficiency. The results of these studies seem to indicate that the cardiac changes in chronic Bright's disease have a wide range of variation, and that one can not predict with certainty the exact nature of the changes which may be present in any given case, except that they probably are degenerative, and that, sooner or later, a condition of heart failure will be reached which may fairly be designated as a Bright's heart.

The more marked these are in any case, the more unfavorable the prognosis. We must, as it seems to me, regard Bright's disease as a constitutional disease, in which the repair and waste in all the tissues of the body are imperfectly carried on, and in one way or another the kidney changes are expressive of other visceral and arterial changes, which, combined with the kidney lesion, make up the clinical and pathological history of the disease.

The Manhattan Medical and Surgical Society has elected officers for the ensuing year as follows: Dr. Edmund C. Wendt, president; Dr. Thomas L. Stedman, vice-president; Dr. Dillon Brown, secretary and treasurer.

SURGERY OF THE BRAIN,

BASED ON THE PRINCIPLES OF CEREBRAL LOCALIZATION.

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(Continued from page 485.)

Brain Tumors.

THE various tumors of the brain are no longer of interest solely to the clinician and the pathologist. Thanks to the researches of these gentlemen, a field of cerebral, and I may add cerebellar, surgery has been opened to us which was a few years ago literally *terra incognita*. Prompted by the brilliant discoveries of Hitzig, Fritsch, Ferrier, and others only less well known, Macewen, Godlee, and Horsley were quick to take practical advantage of their results and to inaugurate a new era in surgical achievements—an epoch, indeed, whose remarkable results have only been surpassed by Mr. Horsley's recent successful removal of a myxoma from the spinal cord, and Macewen's somewhat similar cases.

Indeed, if you will pardon the moment's digression, so astonishing have been the advances of the past twenty years that one finds ample justification in maintaining that, with the sole exception of the science of electricity, nowhere in the whole domain of theoretical or applied science has progress been so rapid or visible results so remarkable as in surgery. So far as operative surgery is concerned, it can now rank as an exact science.

But little must here be said of brain tumors save in a purely operative sense. Their general features, which most concern the surgeon, have been well summarized in a paper read by Dr. Zenner before the Cincinnati Academy of Medicine, February 1, 1886. The principal features of a brain tumor which produces symptoms are: first, its location; second, its size; third, its character; fourth, rapidity and manner of its growth; and fifth, extent to which it affects the surrounding brain. The various ways in which a tumor may produce symptoms are: first, by increased pressure; second, by direct influence on brain tissue. When a tumor is in the cortex, the adjoining brain gradually accommodates itself, to a certain extent, to the increasing pressure; at the base or in the neighborhood of the nerve trunks such condition is not met with in many cases. When a part of the cortex has been destroyed, another part assumes a certain portion of its function. The symptoms produced by these changes may arise either from loss of function or from irritation. Nerves may be compressed where they pass through the dura, or directly in their course, or by enlarged blood-vessels. Convulsions may occur from tumors in any part of the brain; optic neuritis is by no means common. The chief localizing symptoms are paralysis of the cranial nerves, hemiplegia, monoplegia, hemianæsthesia, partial spasms, reeling gait, aphasia, and hemiopia. In the frontal lobes, the corpora striata, and the optic thalami, brain tumors are frequently latent. When an individual suffers from constant headache that is not relieved by ordinary methods of treatment, he should be examined for brain tumor. Wernicke has suggested an operative procedure in cases where removal is not to be

thought of—namely, tapping the ventricles in order to relieve intracranial pressure. This may be of value in rare or unusual cases. Tumors in the posterior fossæ of the skull usually cause a large accumulation of fluid in the ventricles. The distended third ventricle presses downward on the optic chiasm and produces optic-nerve atrophy; these are the cases in which blindness appears early—in other words, atrophy of these nerves is usually the result of a tumor in the posterior fossæ of the skull, generally in the cerebellum.

Considered in their surgical relations, we may, with Bergmann, divide brain tumors into (*a*) the circumscribed (encapsulated); (*b*) the infiltrated (diffuse), around which, as a rule, there is a zone of softening.

The former displace the brain substance, the latter destroy and supplant it. The former may be enucleated, the latter not. In order to remove the latter, one must remove a wide margin of surrounding tissue, as in removal of similar growths in other parts, or he must make total ablation, which is only possible in two places—the frontal and occipital extremities. Obviously these limitations reduce at once the number of cases suitable for operation.

Yet another class of neoplasms deserves at least mention here—*i. e.*, those growing from the interior of the cranium. These by pressure may give rise to meningeal irritation or pressure symptoms, or both. Providing that a reasonably satisfactory diagnosis can be made, it must be indeed an extensive growth from the cranial vault which shall contraindicate operation. It is not so uncommon an event at present to see large areas of the bony covering of the brain removed for the extirpation of neoplasms involving them or the membranes, and pressing on the brain. Gussenbauer has removed half the frontal bone with a little of the great wing of the sphenoid and the squamous, recovery following without disturbance of any kind. Macewen has done nearly the same thing. Langenbeck and Bergmann have excised large pieces of the dura, and the latter, as well as Küster, not only has done this, but has removed a portion of the superior longitudinal sinus. No hesitation need then be felt in attacking any such lesion so long as the general condition of the patient may warrant it.

But supposing the case of a tumor in or near the cortex, we are, if possible, to learn yet more about it. It should not be a diffuse growth surrounded by a zone of degenerated tissue, nor should it be too large or extensive. These tumors are not always so constituted that they are easy of recognition even after exposing the brain. Unfortunately, diagnosis as regards one of these features is as difficult as concerning the other. Bergmann says that when amidst slight and late brain symptoms signs of increased intracranial pressure quickly develop, the probability is that we have to do with an infiltrated tumor. Tumors growing from the skull can be estimated with perhaps a little more exactitude, although these penetrate a considerable distance, even over motor areas, before they occasion great disturbance.

Considering the uncertainties of diagnosis, some would think it advisable before removing a large area of bone to make an exploratory opening with the trephine, and even

an exploratory incision down to the white matter. Such a procedure would be quite in accord with the principles laid down in the beginning of this paper when advising more frequent exploratory operations. No harm is likely to be done by the preliminary operation, and a clear indication to abstain, thus gained, will often be more satisfactory than the uncertainty which must otherwise surround the case.

According to Jastrowitz (*"Deutsche med. Wochschr."*, No. 11, 1888, p. 209), one should only undertake to extirpate those tumors which are peripherally situated, and in respect to which it can be determined that they are non-multiple, not too large, not infiltrated, and not located in vital parts. Still, if we are to be confined too strictly to this dictum it will prevent us from removing as large tumors as Durante has already shown us we can extirpate successfully, and it will hinder us from trying to imitate Weir's success in removing an infiltrating tumor with two adjoining secondary growths.

What and how many Brain Tumors are Accessible?

The best answer to this question has been given by Hale White (*"Guy's Hosp. Rep."*, 1886, p. 117). He carefully studied the records of one hundred brain tumors found in the dead-house of Guy's from 1872-'84, with particular respect to possibility of operation. According to the records, one brain tumor was found in every fifty-nine autopsies.

Of the 100 studied, 45 were of tuberculous nature, 24 gliomas, 10 sarcomas other than glioma, 2 glio-sarcomas, 5 carcinomas, 4 cysts, 1 lymphoma, 1 myxoma, 5 gummatas, 3 undetermined—total, 100.

Bergmann has carefully gone over White's researches, and concludes that all the tuberculous and gummatous neoplasms must be excluded from consideration in an operative sense. Brain tuberculosis is almost impossible of diagnosis and has always occasioned most unfavorable prognosis, but this he hopes modern surgery may make brighter. Nevertheless, as these tuberculous masses consist almost always of caseous material, it would be most difficult to extirpate them from the soft tissue in which they lie imbedded with any such completeness as is indicated. An operation would in such a case be necessarily incomplete, and return would quickly take place, with, in all probability, tuberculous meningitis. In all of White's forty-five tuberculous cases some other organ was affected, usually several others. In only three of them could operation have offered any prospect of success; but in one of these, with a tuberculous mass on the median side of the left hemisphere, there was tuberculosis also of the peritonæum and Falloppian tube; in the second, with a nodule near the fissure of Rolando, there was infection of lungs and intestines; and in the third, with a focus in the left side of the cerebellum, there was similar disease in the mesenteric glands.

Judging from these cases, it is extremely rare that cerebral tubercle will be considered amenable to surgical help, even could it be exactly diagnosed. Bergmann considers it impossible that the cases reported by Macewen—one as a successful removal of a caseous nodule from the ascending frontal convolution, and the other as a successful evacuation of a tuberculous cyst (*"Lancet,"* 1885, i, 881, 934)—

were cases of genuine tuberculosis; in his estimation they were distinctly syphilitic, and should have been treated with antisyphilitic remedies. Thus far the only genuine and undoubted case is the brilliant one of Horsley, who removed a tuberculous mass from the right cortex of a young man of twenty. Brain syphilis is, in Bergmann's opinion, to be treated with drugs rather than by instruments.

Of the thirty-six sarcomas included in White's studies, fifteen were diffuse and widely infiltrated, and fourteen were utterly inaccessible. Only in four could operation have effected any good. In one of these the tumor was in the middle line of the cerebellum; in the second it sprang from the dura and pressed on the cerebellum; in the third its site was the frontal lobe; and in the fourth the occipital. Two of the three undetermined tumors were operable; one lay in the left lobe of the cerebellum, the other, of dural origin, invaded the right hemisphere.

Of the four cysts, two were multiple and one was complicated with a cancer on the neck and was accidentally discovered; the fourth might have been easily removed, since it lay isolated in the cerebellum. So, too, might the myxoma have been attacked, since it was quite superficial.

In brief, of White's one hundred tumors only nine could have been removed—namely, one tuberculous nodule, four sarcomas, two undetermined tumors, one cyst, and one myxoma. In other words, 9 per cent. could have been attacked, *providing* a fairly accurate diagnosis had been made. *Ante-mortem* diagnosis, however, and anatomical diagnosis are two very different feats. Of the above-mentioned nine, five were located in the cerebellum, one in the frontal lobe, and one in the extremity of the occipital. It is very doubtful if these seven could have been recognized accurately enough during life to have justified attack, while the myxoma was impossible of diagnosis. We are then narrowed down to one tumor out of the hundred which was susceptible of both exact localization and extirpation, even when looked at in the light of the acquirements of to-day. This is not a very favorable showing, to be sure, and is to be accepted only for what it is worth. If it has any very striking bearing I should regard it as only another argument in favor of tentative exploration.

The Operation for Intracranial Tumor.

With regard to the technique of operations on the cranial contents, Mr. Horsley has left but little to be added to the admirable remarks which he has published in the "British Medical Journal," October 9, 1886, page 670, and in the same journal for April 23, 1887, page 863.* To these papers of his the reader and the student of the subject should certainly be referred, and the writer will make no effort to copy his observations in detail. Nevertheless, owing to the extreme importance of the subject and the general interest in it, a brief rehearsal of the most important points in operative technique will not be out of place here.

Preparation of the Patient.—The patient's head should

be shaved two or three days before the operation and carefully washed with green soap and ether, or a mixture of ether and turpentine. From that time the vault of the skull should be kept enveloped in a moist antiseptic compress. In this connection it is worth while to add just here that Dr. Keen has called attention to the utility of shaving the scalp in every case of suspected intracranial lesion, since in two cases he found scars after shaving which were previously unnoticeable.

Aside from this, the usual preparatory treatment suitable for all severe operations should be adopted. The anæsthetic should be chloroform, unless some peculiar feature about the case makes it unwise. Chloroform is known to have a contracting influence on the vessels of the brain; hence its efficiency in these cases. Mr. Horsley has suggested and advised hypodermic administration of morphine previous to operation, with a view of also profiting by its effect in contracting the cerebral vessels. Dr. Keen has resorted to ergot for the same purpose. To the writer it would seem that a combination of the two might be preferable to either alone. In case the patient was already so unconscious that no anæsthetic was needed, the hypodermic use of ergot would amply meet the indication. The lesion should be located as accurately as possible by the methods spoken of in another part of this paper. The writer would suggest the driving of a small, disinfected, headless tack through the scalp into the skull over the center of the area previously located. After dissection of the external flap this tack will serve to point out accurately the portion to be first attacked.

Another point in operative technique. In order to prevent hæmorrhage from the scalp during the superficial explorations, an elastic bandage may be tightly tied around the skull for as long a time as may be required. The question might also be raised whether in some very extensive operations of this kind it would not be justifiable to put into practice that which Senn has shown can be successfully done upon dogs—namely, the isolation of the trachea and the application of a rubber bandage back of it around the whole of the neck. By this procedure he found that the most extensive operations could be done upon the brain or skull as bloodlessly as they are now done upon the extremities.

The styptic properties of cocaine solutions have led Keen and others to resort to them as hæmostatics in brain surgery. Experience must yet show their real value, but they are well worthy of a trial. We are not yet in position to say whether their secondary relaxing effects upon the vessels will lead to any unpleasant disturbance or hæmorrhage. For my own part I have also repeatedly seen benefit from the application of antipyrine solutions on account of its styptic properties. Antipyrine is not only a good hæmostatic, but has some antiseptic properties. It is possible, therefore, that a spray of a one-to-forty antipyrine solution, directed upon the exposed brain tissue, would prove of considerable benefit. In order to test this matter I have anæsthetized animals, and, after extensively uncovering the brain, have cut into it in various directions, and, after causing a free hæmorrhage, have directed upon the

* *Vide* also papers by Macewen, "Med. News," Aug. 18, 1888, p. 169, "Brit. Med. Jour.," Aug. 11, 1888; and by Weir, "Am. Jour. of the Med. Sci.," September, 1888, p. 219.

part a spray of three-per-cent. antipyrine watery solution. Invariably I have seen almost instantaneous evidence of its styptic virtues, and should not hesitate to use it at any time in operating on the human brain.

The old method of beginning the operation was to make crossed incisions. The raising of a semilunar flap, or one of horse-shoe shape, is much superior. This flap should have its apex in such a position that, as the patient lies upon his back, drainage may be made by mere force of gravity. There is an advantage also in raising the periosteum with the flap of the skull. While the Lister carbolic spray is not now often used, still most authorities agree that in theory and in practice it is safer to do these operations under the spray, although there may be no objection to using any other antiseptic, such as hydronaphthol, instead of the carbolic acid. In fact, it seems to me far preferable.

With regard to the methods of perforating the bone, the English and Continental surgeons differ. The former prefer usually the trephine and cutting bone forceps; the latter, the hammer and chisel. American surgeons for the most part agree in practice with the former, and the writer, for his own part, can not avoid the conclusion that the first exploration, at least, can be made more readily with the trephine than in any other way. Those whose facilities permit the use of the surgical engine will find it to be an admirable adjunct to cranial surgery.

What shall be done with the Pieces of Bone removed?

Since Macewen has taught us how to save these fragments and restore them to place, the method has been widely tried and generally commended, and it is now the proper thing to put all pieces of bone thus removed at once into a warm antiseptic compress to be utilized at the close of the operation. Spitzka, among others, has paid particular attention to this technical point. At an autopsy three months after operation he found the reinserted button of bone in part firmly reunited; it was raised above the surrounding level, but the inner contour of the calvaria was restored, and the dura was not adherent. He concludes that buttons of bone, aseptically reimplanted, may, at least in young persons, become reunited to the calvaria, and that, even in the event of failure of bony union, they are perfectly harmless. He regards it as very essential that they be replaced, and illustrates this by a case-record to the point ("Trans. of the Am. Neurol. Assoc.," 1887, p. 22).

Dr. Mills deems it inadvisable to reinsert large or irregular areas of bone, or those with very irregular edges or inner surface, until they have been smoothed off. But, as we know, whenever it may be unwise to restore an integral portion of the bone it may be chipped into minute pieces, and these strewn over the external surface of the dura before laying the skin flap in place.

Dr. Dercum has, furthermore, called attention to the inadvisability of preserving fragments of bone in a bichloride solution for so long a time as might be necessary in certain cases, and he thinks, most wisely, that the risk of long-continued immersion would be greatly diminished by keeping them in fresh blood-serum, or in the physiologist's salt solution (7.5 *pro mille*) ("Polyclinic," June, 1888).

Treatment of the Dura Mater.—This should be incised, according to Horsley, around four fifths of the circumference of the area exposed, at a distance of an eighth of an inch from the edge of the bone, so that it may be afterward conveniently stitched. Arterial branches running in its substance may have to be severed, but may be easily secured. Portions of this membrane which adhere to underlying tumors are usually considerably altered. If the case is of recent origin, the dura will be found highly vascular; in advanced cases it may be yellowish, and in some instances, on separation from the growth beneath, it is found to be of a dirty-reddish color. Whenever adherent, it should be freely excised. After division of the dura, one must first look for protrusion of the brain. Horsley maintains that marked protrusion of the dura indicates pathological intracranial tension, obviously a sign of great importance. Next, the color of the brain should be observed. It will be remembered that the cerebellum has normally a different appearance from that of the cerebral cortex. In the latter, it is said that the existence of a yellowish tinge or a pink lividity indicate the existence of a tumor beneath. In the light of some pathological experiences of his own, Jastrowitz advises us to trust to the sense of touch, when in doubt, rather than to that of sight, in estimating the condition of the brain after exposure ("Deutsche med. Woch.," No. 11, 1888, p. 210).

It has more than once happened that, even after careful exposure of the brain according to the best rules of localization, uncertainty has arisen as to which convolution was the desired one. In such cases the battery has been applied, by Horsley, Keen, and Deaver, with satisfactory result. It will therefore always be well to have this adjuvant at hand.

The condition of the vessels must be observed, note being taken of yellowish-white patches in the perivascular lymphatics, which are indicative of old mischief. Next, a species of manipulation should be practiced in order to detect either fluctuation or an increased resistance denoting a tumor; nothing being found upon the surface and no tension being discovered indicative of deeper lesion, further exploration can be conducted with a small aspirating needle, or with a probe or grooved director. The general harmlessness of the introduction of a small hollow needle into the brain has been clearly demonstrated already.

Further Investigations.

If the symptoms have been sufficiently grave to call for so much exploration, it is not likely that the careful separation of the convolutions with the rounded point of the probe, or even the pushing of the same through the layers of the cortex, will give rise to any serious disturbance, while the needle or the probe may reveal the presence of pus, or, by the increased resistance offered by a tumor, may indicate its presence.

Should a tumor present or be discovered, the method of its removal will depend somewhat on its depth and character. Incisions for the removal of tumors should be made perpendicularly to the surface of the brain, both because bleeding can be more readily controlled and because, by

these vertical cuts, the paths taken by the fibers of the cortex to the internal capsule are divided to the smallest possible extent; in other words, all incisions should be directed into the corona radiata. When it is possible, a portion of each motor center should be allowed to remain, so that absolute paralysis of a given part may be prevented, so far as this can prevent it, since total destruction or ablation commonly means absolute loss of motor power for all time in the part supplied therefrom.

Removal of a layer of cortex, whether normal or abnormal, does not leave, as might be supposed, a prominent gap with vertical sides, for in a short time the most depressed portion is made to bulge almost to the level of the intact parts surrounding. In addition, the cut edges are also slightly everted, and if less brain is removed than bone, these are extruded into the opening in the skull; thus, owing to mechanical arrangements, there is a continual normal tendency to hernia cerebri. But Bergmann and others have shown that the tendency to hernia cerebri is in inverse ratio to the area of bone removed, so that there is the greatest danger of hernia when but a small trephine opening has been made. As experience has extended in these cases, we are taught that it is to the best interest of the patient to remove brain tissue to an extent greater than was at first supposed—that is, one should go as wide of lesion in the brain as he would of the apparent border of the ulcer in excising a cancer of the lip. Bergmann and Horsley have also made plain that which was not previously generally appreciated—that in all operations for epilepsy of traumatic origin the portions of the cortex nearest the evident lesion should be freely removed.

Drainage.—The question of drainage must be decided by the circumstances attending each case. An abscess must plainly be drained so long as pus is discharged, but the wound or cavity left after antiseptic removal of a tumor should hardly ever, if ever, be drained for more than twenty-four or forty-eight hours, and this draining may be effected by rubber tubing or strands of horse-hair or catgut.

Closure of the Wound.—All hæmorrhage must first be checked; suitable drainage is then provided for, according to the necessities of the case. We wish, so far as possible, to obtain primary union; also to make sufficient pressure upon the brain to check tendency to protrusion. During the first twenty-four hours there is usually a slight or continuous oozing of blood and serous fluid from the fresh surfaces, but in all save abscess-cases the drainage-tube may be removed on the succeeding day, and the wound dressed with a certain amount of pressure over the flap. Any exudation that subsequently collects in the cavity or over it will thus be retained and may give rise to some pain in the wound, with apparent distension, so long as pressure remains. Symptoms from this are not severe. The wound may be left with confidence that the fluid will be reabsorbed in due time and that pressure will be the best check to protrusion. In case the primary union be broken up by this pressure, it may be regarded as simply a safety-valve action; otherwise the increased pressure will merely compel the lymphatics to more rapid absorption. According to Horsley, the cavity is gradually filled with a delicate pink, spongy

connective tissue, whose meshes contain this fluid, which forms a plastic barrier between the scalp and the brain, and which subsequently separates the brain from its environment by a cushion of soft, normal connective tissue. Fine catgut should be used for closing the dural wound, and catgut or silk, as may be necessary, for the scalp.

How much Brain may be removed?

As a study of the numerous recorded cases will show, we know scarcely any limit as to the amount of either brain or bone that may be removed. Certainly we can unroof large areas of the brain, including ten or a dozen square inches if need be, feeling confident, from the assurance given by many surgeons, that the larger the opening the less the danger of hernia cerebri. So, too, with the brain itself. Spitzka and others maintain that, if in animals, so long as the *brain axis* is not interfered with, life may go on undisturbed, we have not yet reached the limit of what may be accomplished in man, since he has removed the brain in dogs to an extent which a few years ago would have been deemed incredible.

Dangers of the Operation.

In considering the main sources of danger to a patient after removal of a brain tumor, we must perhaps first mention any lack of or failure in aseptic precautions. If any operation seems to call loudly for such measures it is such a one as this. The records of the past are full of the fatal results of such omissions; and yet we meet, just here, with facts which constitute a strange anomaly. We know too well the danger attending the entrance, ordinarily, of foreign or septic material beneath or even in the scalp. Still Spitzka assures us that he has deliberately injected a drachm of the foulest street mud he could procure into the thalamus after trephining. The dog recovered without untoward symptoms. In the arachnoid of the ponto-chiasmal lamina two large masses of dirt were found after the dog had been subsequently killed; a third portion of it was found in the arachnoid lamella on the basilar surface of the oblongata ("Transactions of the American Neurological Association," 1887). His general inference from experiments is that the oftener a dog's brain or dural spaces are insulted by the insertion of indifferent or virulent substances, the greater becomes their resisting power to injurious agencies such as prove fatal to an animal operated on for the first time. In other words, that final immunity is gained by repeated attacks. Let us, notwithstanding, not judge from these interesting experiments that we can afford to disregard any precaution which the best practices of the day afford.

But the principal immediate dangers are two—*i. e.*, hæmorrhage and œdema.

Hæmorrhage.—When the pia is cut, its vessels may bleed freely, so that ligature or its equivalent may be demanded. The brain substance is not likely to give rise to alarm on this account. But that disastrous hæmorrhage from unexpected sources may occur is a lesson we may learn from Birdsall and Weir's case; here two bleeding points were discovered—one from near the straight sinus, probably be-

longing to the pedicle of the growth, the other probably a terminal branch of the posterior cerebral artery. Direct pressure checked their flow and the cavity was filled with iodoform gauze. Nevertheless, oozing continued and the man died of loss of blood nine hours later.

Dr. Keen found in one of his cases that the vessels were so friable that if one end of the catgut ligature were pulled harder than the other the vessel would be cut through; hence absolute equality of traction may be essential.

Bergmann advises, as a rule, to tie arterial stems of appreciable size, and condemns the tampon if it can be avoided. In the brain one may ordinarily cut to a depth of four centimetres before an artery spurts—before there is even more than an oozing; but when such a branch as one from the posterior cerebral on the basal surface of the occipital lobe is cut, experience shows that it must be secured. When necessary one may do as he did in one case: tampon the cavity with iodoform gauze, and make secondary suture of the flap forty-eight hours later if need be. After inserting the tampon the dural and skin-flaps are laid over it and an absorbent dressing applied over all. This tampon must be a rolled-up wad of gauze, covered by as many more as may be needed, till the level of the skin be reached. It thus effects *compression* and *drainage*, and is much better than an inefficient plugging with a strip packed down in the ordinary manner. The subsequent removal of all this, with secondary suture of the flap, may require a repetition of the anæsthetic (chloroform), but this is much preferable to a failure by other methods.

Spitzka speaks of the danger of hæmorrhage beneath the button of bone from too sudden relief of counter-pressure made to repress any tendency to hernia cerebri; also of the danger in exposure of large brain areas in old persons with feeble vascular walls, from relief of pressure upon the intracerebral vessels—practical points worth noting.

On the other hand, Jastrowitz raises the question whether in some cases of cerebral hæmorrhage we ought not to trephine simply for relief of intracranial pressure in order that absorption may more easily take place. He shows that in most cases of brain tumor the *pressure* is a much more serious factor in the fatal result than any other element. Fifty years ago Magendie made experimentally cerebral hæmorrhages in animals, and after they were comatose and paralyzed he quickly opened their skulls, after which they recovered consciousness and part at least of their muscular power.

A second danger is that of *acute brain œdema*. This led to the loss of one of Bergmann's patients five days after operation. This sudden transudation, which perhaps is an exaggeration of the process by which the cerebro-spinal fluid is produced, may be brought about in two ways—either by increase of intra-arterial pressure, or by obstruction of the venous channels of escape. Production of the normal fluid seems to be in proportion to the former; obstruction to venous return must be followed by similar obstruction to lymphatic return. Under this accumulation, however brought about, the brain becomes more sodden. Removal of a portion of the cranium is in effect a diminution of the pressure normally exercised on its contents. Such relief of pressure

is here, as elsewhere, often followed by a reaction with production of excess of fluid. Magendie's often-repeated experiment, showing how rapidly the cerebro-spinal fluid may be reformed after it has been freely drained off, is here very instructive.

Danger of œdema is probably greater after temporary diminution of blood-pressure as a result of considerable loss of blood and through interruption of the venous blood-stream. In large intracranial tumors there is an increase of fluid particularly in the brain cavities—an increase which, after the onset of typical pressure signs, finds its expression in choked disc. It is well known how pressure upon the vena magna Galeni leads to hydrocephalus ventriculorum. If there be added to these conditions of such profuse substitution of fluid yet others which increase production and limit escape—such as the effect of an operation—then one may understand how œdema may quickly supervene or be rapidly increased if already present.

When a fatal brain tumor has produced severe pressure symptoms like stupor or coma, one may surely rely on finding marked œdema at the autopsy. And since this œdematous condition is rather likely to be increased by operation, it is not strange that it should prove fatal within six or twelve hours.

Results.

In closing this brief casuistic there remains to be considered only the important feature of results. These I have thought best to present in tabular form. From this table I have excluded every case in which the operation was not dictated alone by a study of its phenomena relating to the nervous system. I have omitted all trephinations for recent hæmorrhage,* since these are not founded primarily on the principles of localization in our present acceptation of that term; also all operations for epilepsy or insanity or other trouble, when the operation has been apparently performed on account of external scars or on generalized principles. Every recent case or "primary operation" has been omitted. A very large number of cases is thus excluded—cases which have a deep interest and significance of their own, and yet which are not strictly germane to our subject this evening.

(To be concluded.)

OBSERVATIONS ON THE USE OF TEREbene.†

By D. M. CAMMANN, M. D.

A FEW introductory words may be said equally applicable to terebene and to most of the terebinthines. The medicinal value of the turpentine was known to the ancients. The benefit to consumptives of inhaling the atmosphere of pine forests has, as Dr. Loomis‡ remarked in a paper before this society last year, been always recognized, and he goes on to state that the changes attributable to the

* Mr. Jacobson has collected seventy such operations with fifty-seven deaths.

† Read before the American Climatological Association at its fifth annual meeting.

‡ "Evergreen Forests as a Therapeutic Agent in Pulmonary Phthisis."

persistent inhalation of such an atmosphere indicate that it is not only aseptic, but antiseptic. It is probable that this antiseptic element is the peroxide of hydrogen, which has been found present in varying amounts in the air, in rain, in snow and hail, and in different kinds of forests, more especially among pines. That the peroxide of hydrogen is a powerful antiseptic and oxidizing agent has been proved by numerous experiments.* It is stated that each molecule of turpentine gives rise in the presence of air and moisture to a molecule of peroxide of hydrogen, and that this is produced in the presence of pine forests in almost illimitable amount. Doubtless the peroxide of hydrogen has often been mistaken for ozone, as the tests for the two are similar. The important property of absorbing atmospheric oxygen, generating peroxide of hydrogen, and keeping it stored away for future use, is possessed not only by the oil of turpentine, but by terebene, benzine, eucalyptol, and many other essential oils, all animal fats, and a large number of other hydrocarbons.† In the peroxide of hydrogen thus stored away half of the oxygen is in a form of loose combination, and is readily given off on contact with certain substances, such as pus and blood. In fact, if peroxide of hydrogen is brought into contact with blood without the body, it is decomposed with great violence, although it has been injected directly into the circulation without undergoing decomposition, and readily passes without change through animal membranes.‡ Terebene, due to the presence of this powerful antiseptic, has high deodorizing powers, quickly destroying the odor of the most offensive wounds,§ and it has even been advocated in preference to carbolic acid in such cases.|| Given internally, terebene is antiseptic, expectorant, and diuretic, relieves flatulence, and is readily borne by the stomach. In cases of pleuritic adhesions it seems to hasten the absorption of the exudation. Dujardin-Beaumetz places in the order of their relative utility terpinol and terebene first in bronchial affections, and terebinthine and terpine in renal diseases. I have not only found terebene more useful than terpine in diseases of the lungs, but also in renal diseases. It is one of the most satisfactory drugs that I have used for relieving the dyspnoea of emphysema. Its action may be partly due to the relief of the flatulence with which such cases are so apt to be troubled, but is doubtless owing somewhat to the presence of oxygen in a loose form of combination which passes into the circulation and supplies the blood with that much-needed element.

The value of terebene in winter cough was first recognized by Dr. Murrell,[△] of London, and its use in bronchial affections, both chronic and acute, has been indorsed by the few articles ¶ that have since appeared upon the subject.

* Kingzett, "Lancet," June 11, 1881.

† Day, "Lancet," August 17, 1878.

‡ "Mat. Medica," Nothnagel and Rossbach, New York, 1883.

§ F. T. Bond, "Lancet," Sept. 16, 1876.

|| Cambridge Med. Soc., "Lancet," April 2, 1888.

△ "Pure Terebene in the Treatment of Winter Cough." Murrell, "Brit. Med. Jour.," Dec. 12, 1885; also "Pure Terebene and Terpine," *ibid.*, Feb. 27, 1886.

¶ "Terebene in Diseases of the Lungs." Cammann, "N. Y. Med. Jour.," Oct. 8, 1887. "Terebene for the Relief of Dyspnoea." Cam-

For the past two years I have used terebene in a large number of cases. A report of some of these has already been made; of the others, more than forty in number, a few short histories will be given and a brief analysis of the results attained. I am indebted to Dr. F. N. Patterson for valuable assistance in keeping the histories:

CASE I.—K. L., aged twenty-eight years. Waitress. October 15, 1887. Gives a history of having been ill for three years. Physical examination shows emphysema and bronchitis. R Terebene, 3 ss., t. i. d.

October 22d.—Cough less frequent and not so hard. Expectoration and dyspnoea less. Urine not increased. After taking the medicine feels dizzy and nauseated. Reduce terebene to ℥ xv, t. i. d.

November 5th.—Cough almost gone. Has a feeling of "smothering" at night.

12th.—Scarcely any cough or expectoration. Used to be very short of breath, but now has scarcely any dyspnoea.

January 3, 1888.—Says she has felt quite well, has had no cough since last note, and has not taken medicine. For the past two weeks, however, has again had cough. R Terebene, ℥ xv, t. i. d.

19th.—Cough and expectoration less. Has a "smothering" sensation over the chest at night. Urine increased.

March 3d.—Says she was entirely free from cough after the last time she was here until lately, when she caught fresh cold and returns for the terebene mixture.

CASE II.—J. H. Z., aged twenty-six years.

November 19, 1887.—History of illness for two years. Physical examination shows chronic bronchitis and pleuritic adhesions. Six months ago he took terebene, ℥ xv, q. i. d., for several weeks. At that time his cough improved, and the expectoration became less in amount and thinner. Has not taken medicine for several months. R Terebene, ℥ xv, q. i. d.

December 3d.—Cough, expectoration, and dyspnoea a great deal less. Urine not increased. Feels better in every way.

CASE III.—P. C., aged thirty-nine years.

December 13, 1887.—Has had cough for one week. Physical examination shows bronchitis. R Terebene, ℥ xv, t. i. d.

15th.—Cough less; expectoration the same in amount, but thinner. Urine not increased.

17th.—Coughs and expectorates scarcely at all. Feels much better.

CASE IV.—H. W., aged forty-eight years.

December 17, 1887.—Has had cough more or less all the time for the past eight years. Has had attacks of asthma for the past eight weeks. The history that he gives shows asthma, and the physical examination bronchitis. R Terebene, ℥ xv, t. i. d.

22d.—Cough less at night. Expectoration the same in quantity, but thinner. Urine increased. Terebene increased to q. i. d.

31st.—Cough better. Expectoration less and thinner. D noea less. Appetite improved.

January 5, 1888.—Still improving. Urine increased.

21st.—At times better and at others not so well, but, on the whole, steady improvement.

31st.—Cough no better than at first. Thinks that he has taken fresh cold. Dyspnoea very much less. Expectoration less and thinner. Urine increased. Terebene stopped. R Potass. iodid., 3 ij; liq. potass. arsenit., 3 ss.; spt. ether. co., 3 ss.; syr. prun. virg., q. s. 3 ij. M. S.: 3 j, t. i. d.

mann, "Therapeutic Gazette," Nov. 15, 1887. Owen, "Brit. Med. Jour.," 1887.

February 11th.—Cough and dyspnœa much worse. He asks that he may have terebene again. $\mathcal{R}$ Terebene, $\mathfrak{m}$ xv, q. i. d.

18th.—Cough somewhat better. Expectoration less. Dyspnœa not much improved. Urine increased.

CASE V.—G. N., aged thirty-nine years.

December 22, 1887.—History of illness for six years. Physical examination shows phthisis pulmonalis. $\mathcal{R}$ Terebene, $\mathfrak{m}$ xv, t. i. d.

January 24, 1888.—Has been taking the terebene, but not regularly. Cough is much improved. Expectoration less and thinner. Urine increased.

March 29th.—The terebene benefited him. Lately he has not felt the need of it, and so has not taken it for some time. Returns for more. Does not pass as much urine when he is not taking the medicine.

April 7th.—Cough a little better and expectoration thinner

June 28th.—Cough and dyspnœa have been steadily improving, and he feels better than he did.

CASE VI.—J. L., aged twenty-four years.

December 27, 1887.—He gives a history of illness for the past six months. Physical examination shows bronchitis and emphysema. $\mathcal{R}$ Terebene, $\mathfrak{m}$ xv, q. i. d.

31st.—Cough and dyspnœa less. Expectoration less and thinner. Urine not increased.

January 11, 1888.—Improvement continues.

CASE VII.—L. P. R., aged fourteen years.

January 7, 1888.—He gives a history of cough during the winter for several years. Physical examination shows bronchitis with old pleuritic adhesions. $\mathcal{R}$ Terebene, $\mathfrak{m}$ xv, t. i. d.

11th.—Cough less. Expectoration less and thinner. Urine not increased. Terebene increased to q. i. d.

21st.—Continued improvement to four days ago. Since then he has been out of medicine and thinks that he took fresh cold.

28th.—Cough less. Expectoration less and thinner.

February 4th.—Continued improvement. Urine increased.

April 21st.—The cough had disappeared entirely. Now he complains of pain in the chest and the cough has reappeared.

Thirteen * cases were of chronic bronchitis, most with more or less extensive pleuritic adhesions. Three were acute bronchitis, ten emphysema, two asthma and bronchitis, ten phthisis, one pleurisy, and one of the third stage of pleuropneumonia. Two of these, both cases of acute bronchitis, were cured, one in four and the other in eleven days. Thirty-three cases were improved, most of them markedly, but a few only to a slight degree. Five were unimproved, two of the patients being obliged to discontinue the drug after two or three days, as it produced vomiting. The shortest time the treatment was continued in any case was four days, the longest time six months. The average length of treatment was a little over twenty-six days. Most of the patients took fifteen minims and some as much as half a drachm in a mucilaginous mixture four times daily. In all except three the cough was improved, becoming softer and less frequent. In twenty-six the quantity of the expectoration was lessened, in four it was unchanged, and in two it was increased. The latter were under treatment only one week, and it was found in some of the other cases that the expectoration was increased for the first few days and afterward diminished. In seventeen cases the expectoration became thinner and more wa-

tery; in six it was no thinner. In the other cases no note was kept in regard to this point. In those troubled with dyspnœa it was diminished in thirteen and undiminished in eight. The patients noticed an increase in the urine in nine cases; no increase was noticed in fifteen. In many of the cases the appetite improved. In two cases the terebene caused vomiting, in two nausea, in one dizziness and nausea, and in two dizziness. These symptoms usually disappeared when the dose was reduced. It is beneficial in affections of the bronchial mucous membrane, both acute and chronic. It relieves the dyspnœa of emphysema, it is readily borne by the stomach, and it seems to have a resolvent action on pleuritic adhesions.

19 EAST THIRTY-THIRD STREET.

GONORRHOÆAL INFECTION OF THE MOUTH.

By CONDUCT W. CUTLER, M.D.

Miss J. C., aged twenty-one, presented herself for treatment at the New York Dispensary, July 18th, with the following history:

Ten days previously, while under the influence of liquor, she yielded to the unnatural desires of a sailor, and had taken his penis several times into her mouth. The next morning her mouth felt raw and dry, and the saliva had a horrible taste. On the second day little sores made their appearance about the lips, and the condition of the mouth remained the same. On the third day the gums and tongue became swollen and painful, and on the fifth day the whole inside of the mouth was so intensely inflamed that she was unable to eat, and a whitish fluid, mixed with blood, having a nasty odor and taste, was secreted. This continued until the pain and inability to eat compelled her to seek medical advice at the dispensary. On examination, the lips were found cracked and covered with herpes in all stages of development. The mucous membrane of the lips and cheeks was thickened, reddened, denuded of epithelium in places, and, in small areas, covered with a false membrane, which was easily detached, leaving an excoriated surface.

The gums were swollen and retracted from the teeth, bleeding readily upon pressure. The tongue was swollen, very tender on touch and pressure, and could be but slightly protruded, and then only with great pain and effort. The surface was red and glazed in appearance, with small superficial ulcers here and there, secreting a thick yellowish pus. The soft palate and anterior pillar of the fauces presented an inflamed appearance, but beyond the parts seemed to be in a normal condition. The breath was extremely offensive, although there was but little salivation.

The secretion from the mouth consisted principally of mucus, pus-cells, and epithelium, with presence of large numbers of bacteria. The false membrane contained micro organisms resembling the gonococcus, but their identity was not fully established.

The sailor freely admitted that he had been suffering from a severe attack of gonorrhœa, and, not wishing to infect the girl, had entreated her to comply with his unnatural demands. She had yielded to his wishes, and become affected with a purulent stomatitis, probably gonorrhœal in character.

The symptoms were greatly relieved with the local application of glycerin and bismuth subnitrate, together with a mouth-wash of chlorate of potassium, but the patient disappeared from under observation before the cure was complete.

150 WEST FIFTY-THIRD STREET.

* Most of the cases were treated at the Demilt Dispensary, New York.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 10, 1888.

THE INJURIOUS EFFECTS OF FACTITIOUS LIQUORS.

At a recent meeting of the French Academy of Medicine, a report of the proceedings of which we find in the "Union médicale," M. Laborde concluded the reading of a paper on the poisonous action of alcoholic liquors. So far as we are able to judge from the account, the author had reference mainly, if not wholly, to factitious spirituous liquors. His paper was founded largely upon laboratory experiments in which the products that were made the subject of investigation had been administered by intravenous injection. Some of those present objected to conclusions drawn from this method of administration. M. Laborde, however, maintained that, especially in the case of highly diffusible substances, the effects were quite the same, no matter what the avenue of ingestion.

The particular substance considered by M. Laborde on the occasion referred to was *essence de noyau*, a compound containing in each pint ninety grains of a "bouquet" consisting of benzonitrile and benzoic aldehyde. This "bouquet," whether injected or given by the stomach, proved fatal to dogs, when used in sufficient quantity, death being preceded by convulsions. Post mortem, the left side of the heart was found firmly contracted, and this, the author thought, might explain certain fatal cases of acute alcoholism in man. However, as in some instances the heart was found in diastole, it was probable that the effect upon the organ was not always tetanizing, but sometimes inhibitory. According to M. Laborde, it is not even necessary to swallow the *essence de noyau* in order to experience its deleterious action; the inhalation of its vapor is enough, and this, the author stated, had often caused him and his assistants trouble. He himself had suffered most severely, at first with vertigo, headache, tremor, and dyspeptic symptoms. These phenomena having subsided during an interval between experiments, he grew negligent and was subsequently attacked with fulminant symptoms. As he was leaving the laboratory on a certain day, he was taken with a veritable stroke of vertigo (*un véritable ictus vertigineux*), accompanied with faintness, profuse perspiration, palpitation, precordial distress, and tremor. He did not lose consciousness, but stood resting against a wall for perhaps a quarter of an hour, until a boy employed by the *Faculté* came to his aid. This, he said had happened a year before, and he was not yet well, his urine and breath still showing traces of benzoic aldehyde. In one case, that of a distillery employee, he had observed epileptoid attacks.

M. Laborde classes the non-convulsivant substances of this sort as follows: 1. Those that may prove fatal, such as cinnamic aldehyde, cinnamate of ethyl, and the flavoring essences

(*essences-bouquets*) of Irish whisky, London gin, Holland gin, cherry brandy, Dutch bitters, and kirsch. 2. Those that are not usually fatal, including the benzoates of amyl and of methyl, acetate of amyl, the butyrates of ethyl and of amyl, the succinates of ethyl and of methyl, the malate, the valerianate, and the cœnanthylate of ethyl, malate of methyl, acetal, methylal, amyltartaric acid, etc. 3. Those that are almost harmless, such as the flavoring essences of rum, cassis, cognac, brandy, curaçao, kümmel, maraschino, benedictine, Paris anisette, grenadine, etc.

But it is not alone in flavoring compounds that M. Laborde sees danger, but also in the spirit forming the fundamental ingredient of factitious liquors, either from defective processes of distillation or from deliberate sophistication. As to the former, the remedy, he thinks, lies in repeated rectification. He closed his paper with a warm denunciation of the ways pursued by the makers of spirituous liquors. In the discussion, M. Lancereaux, who remarked that he had been reproached with attributing too many accidents to alcoholic intoxication, although he did not look upon it as the cause of generalized atheroma or of renal diseases, stated that he had never observed epilepsy in cases of alcoholism in man. M. Laborde, however, was convinced that true epilepsy was sometimes met with as a sequence of acute alcoholism. It will be seen that, while the author of the paper expresses the opinion that certain flavoring essences, those of rum, brandy, etc., are almost harmless, it does not follow that those factitious spirits may be regarded as innocuous, for the spirit that forms their chief constituent may itself contain very injurious ingredients. It is manifest that all such products should be avoided, and it is not unreasonable to hope that before long their sale may be interdicted.

A REMARKABLE CASE OF CONGENITAL MALFORMATION.

A CASE of peculiar interest is reported in the "British Medical Journal" for October 20th, that of a man who had reached the age of fifty-four years with an imperforate anus. Immediately after birth it was discovered that fæces and urine were passed by the urethra, and that the anus was imperforate. An attempt was made to establish an anus in the natural situation, but only a narrow and useless fistulous opening resulted, and the passages continued as before, except that fluid from time to time escaped from the anus. When the patient was ten years old the urethra became blocked with hardened fæces, and relief was afforded by an incision into the urethra immediately in front of the scrotum. This incision resulted in a permanent fistula, through which the patient continued to pass fæces and urine. He was in the habit of taking a laxative daily, and had to squeeze the fæces through the fistula with his fingers, the proceeding occupying from an hour to an hour and a half. From time to time the urethral fistula became blocked, and then everything was passed by the meatus. Sometimes, also, the urethra became blocked, and then the fæces escaped by the urethral fistula and the urine by the same opening and also by the anal orifice till he succeeded in displacing the ob-

struction. The urine was generally clear and normal, though it sometimes contained a brown deposit and had a faecal smell. At the time of his death the man had been married twenty-four years, and was the father of a child.

The man was small of stature and had a peculiar dark complexion, not unlike that of a patient with Addison's disease. Latterly the urethral fistula had contracted and his difficulty had increased. Three days before his admission into a hospital the urethra had become blocked, and this had compelled him to seek assistance. On examination, a fistulous opening was found in the urethra just in front of the scrotum, along which a probe passed readily into the bladder. The urethra between the fistula and the meatus was blocked by a faecal concretion. The anal opening only admitted a fine probe.

The urethra was slit up through the fistula an inch and a half, and the substance blocking the canal was removed. The mucous membrane was then sutured to the skin and the fistula converted into a good-sized opening, through which he continued to pass both urine and faeces so comfortably that he refused further operation.

The case is one coming under the sixth variety in the classification of Papendorf and most other standard writers on the rectum—that in which the anus is absent and the rectum ends in the bladder, urethra, or vagina. Of these varieties, that in which the rectum opens into the vagina is most common. In females the rectum seldom if ever opens into the bladder, but it sometimes opens into the urethra. In males it opens oftener into the bladder than into the urethra, and in such cases it may terminate either by a narrow duct running obliquely through the bladder and opening into the *bas-fond* between the orifices of the ureters, or by a free opening (Kelsey).

These cases are rare, and generally they are quickly fatal from intestinal obstruction or from cystitis, and in this consists the great interest of the case reported. For, though several have been recorded in which life has been prolonged three or four years, the one mentioned by Gross and quoted by Kelsey, in which the patient lived to the age of thirty years, has up to the present time been considered quite phenomenal. In the case under consideration, however, the man had lived fifty-four years, was the father of a child, and, after the relief given by the slight operation mentioned, bade fair to get along without further trouble. The opening was evidently urethral and not vesical—a point in the diagnosis often very difficult to decide, and one having a great influence on the prognosis.

MINOR PARAGRAPHS.

A DEFENDER OF SIR MORELL MACKENZIE.

Dr. JOHN O. ROE, of Rochester, has been "interviewed" by a reporter on the staff of the Rochester "Post-Express" on the subject of the controversy over the conduct of the late Emperor Frederick's case. The reporter's questions and Dr. Roe's answers have been reprinted in the form of a pamphlet, a copy of which has kindly been sent us with Dr. Roe's compliments. This is the only instance that we remember of the republication

of a newspaper interview by a physician. Under ordinary circumstances we should consider it a procedure of very questionable propriety, but perhaps the publicity previously given to the wrangle may be looked upon as having done away with that objection. We hope, however, that it will not be taken as a precedent. As to the tenor of Dr. Roe's argument in the case, it is an out-and-out indorsement of Sir Morell Mackenzie's course, not only in the management of the case, but also in that of his publication—an indorsement that neither the "Lancet" nor the "British Medical Journal" can bring itself to give, and one that, in our opinion, the facts do not justify. In the opening paragraph of the "Post-Express's" article it is stated that Dr. Roe has "enjoyed the intimate personal acquaintance of the celebrated English surgeon," so that it is presumably in the light of personal loyalty, rather than of judicial appreciation, that Dr. Roe's argument is to be taken.

THE PROPOSED NATIONAL PATHO-BIOLOGICAL LABORATORY.

ELSEWHERE in this issue we print the text of a bill, shortly to be laid before Congress, for the establishment of a national laboratory for investigation and teaching in the field of experimental aetiology and cognate matters relating to the public health. The bill seems to have emanated from the director of the Patho-biological Laboratory of the State University of Nebraska, Mr. Billings, a bacteriologist of known ability. Concerning its general purpose there can, we suppose, be very little difference of opinion in the medical profession; but as to some of its details—and it appears to us to give too many details—it calls for deliberate consideration, and we trust that it will receive such consideration before being acted on in committee.

SIR MORELL MACKENZIE AS AN EMENDATOR OF VERGIL.

ONE of the English newspapers drops into merriment over Sir Morell Mackenzie's use of the word *hirudo* instead of *arundo*, in a quotation from Vergil, in his book entitled "The Fatal Illness of Frederick the Noble." This, as well as another error in the same quotation, which we shall presently specify, attracted our notice in the New York "Sun's" version of the book, but we presumed at the time that the passage in the book itself would be found to be correct. Such, however, is not the case. The quotation occurs on page 186, and is printed

hæret lateri fatalis hirudo—

i. e., the deadly leech (!) sticks to his side. Of course, our readers do not need to be reminded that in the "*Aeneid*" the passage reads:

hæret lateri lethalis arundo.

The substitution of *fatalis* for *lethalis* was the other error to which we alluded above. This is not so laughable a blunder as the confounding of darts and leeches, but, if one is quoting the classic authors, it is desirable to quote correctly, especially in a controversial publication.

THE DIAGNOSTIC SIGNIFICANCE OF EPIGASTRIC MURMURS.

IN the "*Riforma medica*," Dr. Gabbi, of Florence, publishes his conclusions from clinical and experimental studies of murmurs heard in the epigastric region, and a summary of them is given in the "*Centralblatt für klinische Medizin*." In cases of cancer of the stomach, he says, a blowing murmur is often heard at the epigastrium, interposed between the two cardiac sounds and imitating the *bruit de galop*. In many instances this murmur depends on stenosis of the left superior coronary artery, in others more probably on stenosis of the abdominal aorta from the pressure of the neoplasm. Its intensity is gov-

erned by the degree of the stenosis and by the force of the current of blood, and varies somewhat also with the condition of the stomach as to fullness or emptiness, and with the patient's posture. It is occasionally observed in cases of ulcer of the stomach, and then it may disappear when the ulcer heals. It is always heard most distinctly at the epigastrium. An epigastric blowing murmur may be heard, too, independently of either cancer or ulcer of the stomach, synchronous with the first sound of the heart or intermediate between the two sounds. In the first instance it is propagated from the heart; in the second it is elicited by too great pressure with the stethoscope, especially in anæmic subjects, or is caused by atheromatous growths in the abdominal aorta, abdominal aneurysm, etc.

RESECTION OF A DETACHED LOBE OF THE LIVER.

Dr. C. LANGENBUCH, of Berlin ("Berliner klinische Wochenschrift"; "Centralblatt für Gynäkologie"), relates the case of a woman, thirty years old, who had suffered for eight years with abdominal pain on walking, standing, or lying down. A mass as large as one's fist was found in the upper part of the abdomen, hardly noticeable externally. It was symmetrical, extending about four fingerbreadths from side to side and reaching from the xiphoid cartilage to within two inches of the navel, smooth, and somewhat elastic. It was thought to be an echinococcus sac, but, on opening the abdomen, it was found to be a large detached lobe of the liver, proceeding from that portion of the organ lying to the left of the gall-bladder. Its ligamentous connection with the proper mass of the liver was tied in separate parts, and then, with the exception of a knob of tissue, it was cut away. There was no bleeding at the time, and the abdominal incision was closed. Within a few hours, however, there were urgent signs of internal hæmorrhage, the wound was opened, and the abdomen was found filled with blood. A vessel was still bleeding slightly, and a ligature was applied to it. The patient recovered without fever. Moderate ascites developed gradually, but disappeared after two tapings.

THE POST-GRADUATE TRAINING SCHOOL FOR NURSES.

THE "Second Annual Report of the Training School for Nurses connected with the Post-graduate Medical School and Hospital" gives substantial evidence of the usefulness of this new addition to the nurse-teaching institutions of New York, shown both in the number of pupils and in the increased demand for their services outside the hospital. There are two features in the management of this school that seem to us to call for particular commendation. One of them is the fact that the pupils are not restricted to this one hospital in their field of observation, but are sent by turns to various other hospitals for definite terms of service. The other is the very satisfactory nature of the document that each nurse takes with her to a private employer, which document the employer returns at the end of her engagement, with such remarks as he may think proper concerning her conduct and efficiency. This must give the managers of the school such an insight into the real character and capacity of a nurse as they never could acquire by mere observation of her qualities while she was under their own direct scrutiny.

THE ACTION OF ANTIPYRINE ON THE TEETH.

ACCORDING to the Paris correspondent of the "Lancet," among the inconveniences ascribed to the use of antipyrine is one lately brought forward by Dr. Galippe, a dentist, who states that it has blackened the teeth in several instances in which it has been given internally. He offers no explanation

of the manner in which it acts on the teeth, but he has found that the teeth blacken more readily when they have lost their enamel. The inconvenience is readily remediable, he says, for the discoloration may be removed by simply rubbing the teeth with oxygenated water.

ITEMS, ETC.

The Health of Kansas City, Mo.—For the week ending Saturday, November 3d, according to the city physician's report, there were 35 deaths, including 2 from diphtheria, 1 from intermittent fever, 4 from typhoid fever, 4 from typho-malarial fever, 1 from meningitis, and 1 from cerebro-spinal meningitis. The death-rate was 10·1 in a thousand of the population.

The New York Academy of Medicine.—The next meeting of the Academy, on Thursday evening, the 15th inst., will be devoted to the delivery of the annual address, entitled "The Means of Effecting the Unity of the Medical Profession," by Dr. D. B. St. John Roosa. This meeting is open to the general public, including ladies.

The Cincinnati Polyclinic was organized on the 31st of October. The faculty is as follows: General medicine, Dr. A. C. Kemper and Dr. E. W. Mitchell; diseases of children, Dr. H. W. Rover; diseases of women, Dr. R. B. Hall (treasurer), Dr. Charles A. L. Reed (dean), and Dr. Edwin Ricketts; diseases of the eye, Dr. Robert Sattler; diseases of the throat, Dr. A. B. Thrasher and Dr. J. H. Boylan; diseases of the skin, Dr. A. Ravogli and Dr. Merrill Ricketts; surgery, Dr. H. Longstreet Taylor (secretary) and Dr. Wallace Neff. Only graduates in medicine will be admitted as pupils.

The New York Post-graduate Medical School and Hospital.—Dr. Joseph O'Dwyer has been appointed professor of diseases of children.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 27 to November 3, 1888:*

BAILY, ELISHA I., Colonel and Surgeon, and COCHRAN, JOHN J., Captain and Assistant Surgeon. Detailed for duty on Army Retiring Board, to meet at San Francisco, Cal., for the examination of such officers as may be ordered before it. Par. 3. S. O. 253, A. G. O., Washington, October 30, 1888.

NORRIS, BASIL, Lieutenant-Colonel and Surgeon, will be relieved from duty in the Department of the Columbia by the commanding general of that department, and will report in person, on or before November 14, 1888, to the commanding general, Division of the Pacific, for duty as Medical Director of that division and of the Department of California. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

VOLLUM, EDWARD P., Lieutenant-Colonel and Surgeon, on being relieved from duty as Medical Director, Department of Texas, by Lieutenant-Colonel Joseph C. Baily, Assistant Medical Purveyor, under War Department Order dated October 31, 1888, S. O. No. 256, A. G. O., will, by direction of the Secretary of War, repair to New York city, assume the duties of Acting Assistant Medical Purveyor, and take charge of the medical purveying depot at that place. Par. 2, S. O. 255, A. G. O., Washington, November 1, 1888.

ALEXANDER, CHARLES T., Lieutenant Colonel and Surgeon, is relieved from further duty in the Department of Dakota, and will report in person to the commanding general, Department of the Columbia, for duty as Medical Director of that department. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

BAILY, JOSEPH C., Lieutenant-Colonel and Assistant Medical Purveyor, is, at his own request, relieved from the charge of

the Medical Purveying Depot in New York city, and is by direction of the President, under the provisions of the act of Congress approved June 23, 1874, assigned to duty as Surgeon in the Medical Department. He will report in person to the commanding general, Department of Texas, for assignment to duty as Medical Director of that department, to relieve Lieutenant-Colonel E. P. Vollum, Surgeon. Par. 1, S. O. 255, A. G. O., Washington, November 1, 1888.

STRONG, NORTON, Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from duty in the Department of Arizona, and will report in person to the commanding officer, Fort Schuyler, New York, for duty at that post, and by letter to the commanding general, Division of the Atlantic. Par. 4, S. O. 255, A. G. O., Washington, November 1, 1888.

ARTHUR, WILLIAM H., Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from duty at Fort Bowie, Arizona, and will report in person to the commanding officer, Fort Bayard, New Mexico, for duty at that post. Par. 21, S. O. 250, A. G. O., Washington, D. C., October 26, 1888.

OWEN, W. O., Jr., Captain and Assistant Surgeon, Fort Leavenworth, Kansas, will proceed at once to Fort Sill, Indian Territory, and report to the commanding officer for temporary duty at that post. Headquarters Department of the Missouri, Par. 1, S. O. 133, Fort Leavenworth, Kansas, October 30, 1888.

Appointments.

GLENNAN, JAMES D., and BRADLEY, ALFRED E., appointed Assistant Surgeons, U. S. Army, with rank of First Lieutenants, to rank from October 29, 1888.

GLENNAN, JAMES D., First Lieutenant and Assistant Surgeon, recently appointed, will, by direction of the Secretary of War, repair from this city to Willet's Point, New York, and report in person to the commanding officer of that post for duty. Par. 3, S. O. 255, A. G. O., Washington, November 1, 1888.

Death.

WEISEL, DANIEL, Captain and Assistant Surgeon, U. S. Army, died at Fort Sill, Indian Territory, October 30, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 3, 1888:*

SMITH, HOWARD, Passed Assistant Surgeon. Detached from the Wabash and granted six months' leave, with permission to leave the United States.

ANZAL, E. W., Assistant Surgeon. Ordered for examination preliminary to promotion to Passed Assistant Surgeon.

WIEBER, F. W. F., Assistant Surgeon. Ordered for examination preliminary to promotion to Passed Assistant Surgeon.

ANZAL, E. W., Assistant Surgeon. After examination, detached from Naval Academy and ordered to Navy-yard, New York.

URIO, J. F., Assistant Surgeon. Detached from the Franklin and ordered to Coast-Survey Steamer Gedney.

OWENS, THOMAS, Assistant Surgeon. Detached from Coast-Survey Steamer Gedney and ordered to Coast-Survey Steamer Blake.

BERRYHILL, F. A., Assistant Surgeon. Detached from Coast-Survey Steamer Blake and ordered to Naval Academy.

HARRIS, A. N. T., Assistant Surgeon. Detached from Naval Hospital, Mare Island, California, and to wait orders.

HALL, JOHN H., Passed Assistant Surgeon. Detached from the Monongahela and to wait orders.

CRAWFORD, M. H., Passed Assistant Surgeon. Detached from the Vandalia and ordered to the Monongahela.

GIHON, A. L., Medical Director. Ordered to Naval Hospital, Brooklyn, N. Y.

TAYLOR, JOHN Y., Medical Director. Detached from Naval Hospital, N. Y., and assigned to Examining Board.

HUDSON, ADRIAN, Medical Inspector. Promoted to Medical Director.

BRADLEY, MICHAEL, Medical Inspector. Promoted to Medical Director.

BATES, NEWTON L., Medical Inspector. Promoted to Medical Director.

WOOLVERTON, T., Surgeon. Promoted to Medical Inspector.

WHITE, C. H., Surgeon. Promoted to Medical Inspector.

WOODS, G. W., Surgeon. Promoted to Medical Inspector.

DUBOIS, F. L., Surgeon. Promoted to Medical Inspector.

COOKE, G. H., Surgeon. Promoted to Medical Inspector.

WELLS, HOWARD, Passed Assistant Surgeon. Promoted to Surgeon.

BERTOLETTE, D. N., Passed Assistant Surgeon. Promoted to Surgeon.

GAINES, J. H., Passed Assistant Surgeon. Promoted to Surgeon.

DERR, EZRA Z., Passed Assistant Surgeon. Promoted to Surgeon.

STEPHENSON, F. B., Passed Assistant Surgeon. Promoted to Surgeon.

Society Meetings for the Coming Week:

MONDAY, *November 12th*: New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynecological Society of Boston; Burlington, Vt., Medical and Surgical Club (annual); Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *November 13th*: New York Medical Union (private); Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Camden, N. J., County Medical Society (semi-annual—Camden); Norfolk, Mass., District Medical Society (Hyde Park); Baltimore Gynecological and Obstetrical Society.

WEDNESDAY, *November 14th*: New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

THURSDAY, *November 15th*: New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *November 16th*: Chicago Gynecological Society; Baltimore Clinical Society.

SATURDAY, *November 17th*: Clinical Society of the New York Post-graduate Medical School and Hospital.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

A New Antiseptic. By D. W. C. Wade, M. D. [Reprinted from the "Transactions of the Michigan State Medical Society."]

Martin's Druggists' Directory of the United States and Canada, 1888-'89, containing Lists of the Wholesale and Retail Druggists, and

various Branches connected with the Drug Trade. Advertiser Publishing Company, Boston. [Price, \$2.50.]

Diseases of the Skin. Their Description, Pathology, Diagnosis, and Treatment. By H. Radcliffe Crocker, M. D. Lond., Fellow of the Royal College of Physicians of London, etc. With 76 Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvii-746. [Price, \$5.50.]

Practical Anatomy. A Manual of Dissections. By Christopher Heath, F. R. C. S., Holme Professor of Clinical Surgery in University College, London, etc. Seventh Edition. Revised by Rickman J. Godlee, M. S. Lond., F. R. C. S., etc. With 24 Colored Plates and 278 Engravings on Wood. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi-598. [Price, \$5.]

A Text-book of Physiology. By M. Foster, M. A., M. D., LL.D., F. R. S., etc. With Illustrations. Fifth Edition, largely revised. Part I—comprising Book I—Blood, the Tissues of Movement, the Vascular Mechanism. London and New York: Macmillan & Co., 1888. Pp. xviii-352. [Price, \$2.60.]

Elements of Practical Medicine. By Alfred H. Carter, M. D. Lond., Member of the Royal College of Physicians, London, etc. Fifth Edition. London: H. K. Lewis, 1888. Pp. xvi-472.

The Diseases of the Chest, including the Principal Affections of the Pleuræ, Lungs, Pericardium, Heart, and Aorta. By Vincent D. Harris, M. D. Lond., F. R. C. P., etc. With 55 Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xi-420. [Price, \$2.50.]

A Manual of Ophthalmic Practice. By Charles Higgins, F.R.C.S.E., Ophthalmic Surgeon to Guy's Hospital, etc. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 8-314. [Price, \$1.75.]

Miscellany.

A Bill for the Establishment of a National Patho-biological Laboratory.—We are informed that the following bill is to be presented to Congress:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

That for the purpose of the better protection of the health of the people of the United States from the ravages of contagious, infectious, and malarial diseases, and for the preservation and protection of the great live-stock interests of the country from the decimating devastations of pestiferous diseases of a similar nature, and for the more complete elucidation of the relation existing between many diseases of our domestic animals and the life and health of human beings whose business calls them into intimate relations with them, and of the welfare of the public as consumers of animal food or animal products, there shall be established at Washington, in the District of Columbia, and the United States of America, a laboratory for the purpose of making a continuous and scientific study into the causes and nature of the classes of disease herein mentioned, and of all subjects connected therewith, bearing either upon the public health or animal economies of the country, and that said laboratory be known as the Patho-biological Laboratory of the United States of America.

It is further enacted that the general supervision and control of said patho-biological laboratory shall be in the hands of the Surgeon-General of the Marine Hospital and Quarantine Service of the Government of the United States; that the said Surgeon-General shall, at the completion of the buildings and grounds herein provided for, appoint two distinct and independent directors, who shall be the heads of two distinct and independent departments of investigation, and who shall be known respectively as the director of the humano-patho-biological, and the zoo-patho-biological institutes of the Patho-biological Laboratory of the United States. The directors of the institutes named above shall be competent and skilled patho-bacteriologists, the one in human, the other in animal diseases, and shall, respectively, be graduates from a thoroughly organized and world-accredited medical and veterinary school, college, or department of some university, and shall

have both been engaged in, and have published in some accredited journal or report, investigations which have gained them each reputation in the medical-scientific world, and have demonstrated their fitness for the positions and responsibilities herein provided for.

The salaries of the directors of the institutions above mentioned shall be five thousand dollars (\$5,000) per annum.

The said Surgeon-General, with and by the advice and consent of the directors of the institutes named, shall also appoint an assistant to each at a salary of twenty-five hundred dollars (\$2,500) per annum, respectively; the one assistant to be a creditably graduated doctor of medicine, and the other a doctor of veterinary medicine, both of whom shall be citizens of the United States and shall have done creditable work in the field of patho-bacteriological investigation.

The directors of the institute named shall appoint, with and by the consent of the Surgeon-General of the United States Marine-Hospital Service, such other assistants and servants as shall be necessary to carry on the work herein provided for.

The said Surgeon-General shall also appoint to each of the institutes named a competent chemist, each of whom shall be fully equal to conducting investigations in search of the true character and value of the ptomaines or toxins produced in the evolution of micro-organismal life, and who shall have previously distinguished themselves in this line of research. The salary of said chemists shall be five thousand dollars each (\$5,000) per annum. The Surgeon-General aforesaid is also authorized to employ such assistants and servants for the aid of the said chemists as shall be necessary to the faithful and thorough conducting of their investigations.

The salaries of the persons herein named in connection with the work of the Patho-biological Laboratory of the United States shall be paid out of the funds in the treasury upon warrants drawn by the said Surgeon-General, countersigned by the Secretary of the Treasury Department of the United States. It is further provided that, in order to stimulate and encourage original research into the cause and nature of the classes of disease herein mentioned, the said Surgeon-General is hereby authorized to offer the free use of such rooms and appurtenances as shall be provided therefor in the said laboratory to a limited number of such citizens of the United States as may volunteer their services, at their own expense, and who are known to the said Surgeon-General to have been creditable graduates of an honorable veterinary or medical school or college, and to have distinguished themselves by original research in the lines of work herein provided for, the necessary room, materials and appliances to be supplied by the officials of said laboratory. Said voluntary workers shall agree, in writing, with the said Surgeon-General, to accept two young medical or veterinary students of American schools or colleges, to be selected by the said Surgeon-General, as assistants and students, and to instruct them in the lines of work they may be engaged upon. Such students must be at their own expense, except as to the instruments and implements necessary to work with. The said volunteer investigators must furthermore agree, in writing, to continue any given series of investigation until completed, to the satisfaction of the said Surgeon-General, unless otherwise excused thereby, and must further agree to engage upon any special line of research that may be deemed necessary by the said Surgeon-General, or the director of the institute, of this laboratory, to which they may have been detailed. They must further agree that all the results and benefits of any work performed by them in any department of this laboratory shall become the property of the Government of the United States of America, and be reported in a full and exact manner for publication in the reports of the same. With and by the consent of the director of the institute of this laboratory, in which such a volunteer may be working, and with the written agreement of the Surgeon-General aforesaid, such volunteer investigators may have the privilege of publishing advance reports of their work in the medical or scientific journals of this country. It is further provided that the sum of five hundred and fifty thousand dollars (\$550,000) be hereby appropriated, from funds in the treasury of the United States, for the purpose of purchasing the necessary land in the city of Washington, and for grading and fencing the same, and for the erection of the necessary buildings thereon and the equipment of the same, in accordance with the uses herein provided for, to wit:

For the purchase, grading, and fencing the land, one hundred and fifty thousand dollars (\$150,000). To a laboratory building, two hundred thousand dollars (\$200,000).

The necessary apparatus and equipment of the same, one hundred thousand dollars (\$100,000). For stables, pens, cages, etc., and residences for grooms and servants, one hundred thousand dollars (\$100,000).

It is further provided that the Secretary of the Treasury of the United States, the Secretary of Agriculture, and the Surgeon-General of the Marine-Hospital Service shall constitute the board of trustees and building and purchasing committee of the Patho-biological Laboratory of the United States, and that the persons named are hereby empowered to purchase a location, secure the necessary plans, and build and equip the said institution in the manner herein provided for, and to draw the necessary warrants for the payment of the same in accordance with the letter of this act.

Rewards for Meritorious Discoveries and Inventions.—The Committee on Science and the Arts of the Franklin Institute, of the State of Pennsylvania, respectfully announces that it is empowered to award, or to recommend the award of, certain medals for meritorious discoveries and inventions which tend to the progress of the arts and manufactures. These medals are: 1. *The Elliott Cresson Medal* (gold).—This medal was founded by the legacy of Elliott Cresson, of Philadelphia, and conveyed to the trustees of the Franklin Institute. By the act of the institution, May 17, 1849, the Committee on Science and the Arts was designated and empowered to award this medal, and the committee decided to grant it, after proper investigation and report by sub-committee, either for some discovery in the arts and sciences or for the invention or improvement of some useful machine, or for some new process, or combination of materials in manufactures, or for ingenuity, skill, or perfection in workmanship. 2. *The John Scott Legacy Premium and Medal* (twenty dollars and a medal of copper).—The John Scott Legacy Premium and Medal was founded in 1816 by John Scott, a merchant of Edinburgh, Scotland, who bequeathed to the city of Philadelphia a considerable sum of money, the interest of which should be devoted to rewarding ingenious men and women who make useful inventions. The premium is not to exceed twenty dollars, and the medal is to be of copper, and inscribed "*To the most deserving.*" The control of the Scott Legacy Premium and Medal (by act of 1869) was transferred to the Board of Directors of City Trusts, and referred by the board to its Committee on Minor Trusts, and that committee resolved that it would receive favorably the name of any person whom the Franklin Institute might from time to time report to the Committee on Minor Trusts as worthy to receive the Scott Legacy Premium and Medal. The Franklin Institute, by resolution in 1882, accepted the above-named action of the Committee on Minor Trusts, and referred the duty of making such recommendations to the Committee on Science and the Arts. The committee determined that the recommendation for such reward should be made on the favorable report of a sub-committee which should be appointed to examine the invention or discovery.

Upon request therefor, from interested persons, made to the secretary of the Franklin Institute, full information will be sent respecting the manner of making application for the investigation of inventions and discoveries; furthermore, the Committee on Science and the Arts will receive and give respectful consideration to reports upon discoveries and inventions which may be sent to it with the view of receiving one or the other of the awards herein named, and full directions as to the manner and form in which such communications should properly be made will be sent on application.

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 26th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending October 13th

corresponded to an annual rate of 18·2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 11·9, and the highest in Manchester, viz., 35·7, in a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 5 deaths in Manchester and 3 in Newcastle-upon-Tyne.

London.—One thousand five hundred and thirty-six deaths were registered during the week, including measles, 50; scarlet fever, 30; diphtheria, 26; whooping-cough, 18; enteric fever, 18; diarrhoea and dysentery, 43; simple cholera, 2. The deaths from all causes corresponded to an annual rate of 18·7 in a thousand. In greater London 1,896 deaths were registered, corresponding to an annual rate of 17·9 in a thousand of the population. In the "outer ring" the deaths included diarrhoea, 14; diphtheria, 8; scarlet fever, 6.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending October 6th in the sixteen principal town districts of Ireland was 20 in a thousand of the population. The lowest rate was recorded in Lurgan, viz., 5·1, and the highest in Armagh, viz., 25·8 in a thousand. In Dublin 160 deaths were registered, including measles, 2; enteric fever, 3; scarlet fever, 2; diarrhoea, 13; whooping-cough, 7.

Italy.—The Minister of the Interior issued the following order under date of September 26, 1888:

[Translation.]

1888.—MARINE HEALTH ORDER, No. 11.

The Minister of the Interior, by virtue of the law of March 20, 1865, on public health, Supplement C, and the ministerial instructions of December 26, 1871,

DECREES:

That from to-day on the sanitary treatment of vessels arriving in the ports of the kingdom with unclean bills of health owing to yellow fever is established as follows:

ARTICLE I. Vessels recognized to be in good healthy condition will be admitted to free pratique after a medical visit, if it appears from the explicit declaration of the ship's surgeon—

(a) That aboard the same there have not been laden soiled effects for personal or domestic use, or at least that such effects were taken aboard after being washed or disinfected in a suitable manner.

(b) That during the voyage there has been neither a verified case nor a suspected case of yellow fever.

ART. II. Those vessels which are not found in the conditions indicated in Article I will be admitted to free pratique after a rigorous medical visit and a regular disinfection of the soiled personal and domestic effects; always provided that it appears from the declaration of the ship's surgeon, or, in the absence of such officer, of the captain, that during the voyage there has been verified no case of the above-named disease.

ART. III. Those vessels furnished with a ship's surgeon, which, although having had cases of yellow fever during the voyage, remained free from it for at least twelve days after the complete cure or death of the affected persons, will be admitted to free pratique under the precautions indicated in the preceding article. In such case, however, a physician's certificate will be necessary, from which it must appear that the most rigorous disinfections have been made of the effects belonging to the diseased (malati), and of the places in which they were treated.

ART. IV. Those vessels which, after having had cases of yellow fever aboard, arrive in a port of the kingdom, and are not found in the conditions indicated in the preceding article, will be sent to the maritime sanitary station which, case by case, shall be designated by this ministry.

Those vessels may also proceed direct to the Asinara Station (Asinara Lazaretto) before mooring in any Italian port, in order there to submit to the practices which this ministry may command.

ART. V. It will be in all cases forbidden to any vessel whatsoever, coming from regions infected with yellow fever, to discharge ballast, if of earth or of sand; such shall be made on the open sea at the distance of at least five kilometres from the shore.

ART. VI. With the present order the preceding ordinance of May 29, 1878, No. 9, shall be understood to be revoked in all its parts.

Bordeaux, France.—Five hundred and twenty-two deaths were registered during the month of September, 1888, including enteric fever, 12; scarlet fever, 4; diphtheria and croup, 11.

Maceio, Brazil.—Eight cases and 2 deaths from small-pox were reported during the month of September, 1888.

Havana.—Seven deaths from yellow fever are reported for the week ending October 19, 1888.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.
Barmen.....	Oct. 13.	109,000	27								
Leghorn.....	Oct. 14.	101,854	34								
Mayence.....	Oct. 6.	65,802	37						1		
Cadiz.....	Oct. 13.	65,028	40								
Vera Cruz.....	Oct. 18.	23,800	20		1						
Gibraltar.....	Oct. 1.	23,631	10								
Kingston, Can.....	Oct. 26.	17,300	1								
Cape Haytien.....	Oct. 13.	15,000	7								
St. Thomas, W. I.....	Oct. 12.	15,000	4								
Laguayra.....	Oct. 13.	7,428									
Paris.....	Oct. 13.	2,260,945	986			1		7	10	24	5
Glasgow.....	Oct. 13.	545,678	220					2	3	6	
Warsaw.....	Oct. 6.	444,814	266				7		21	8	
Amsterdam.....	Oct. 13.	389,916	154			1		2			
Munich.....	Sept. 29.	275,000	140						3	1	
Palermo.....	Oct. 13.	250,000	78			1				1	
Genoa.....	Oct. 13.	179,789	90			1	11			1	
Trieste.....	Oct. 6.	154,500	62			7				3	
Toronto.....	Oct. 20.	130,000	28					1		2	
Stuttgart.....	Oct. 13.	125,510	37						1	2	
Bremen.....	Oct. 6.	122,000	34							1	
Havre.....	Oct. 6.	112,074	108			1		11		4	
Pernambuco.....	Oct. 9.	110,000	79				2	1			

UNITED STATES.

Palmetto, Fla.—The following has been received under date of October 20, 1888:

I sent telegram reporting situation for week ending October 14, since which time to the present, 9 P. M., 20th, there have developed only 3 new cases in Palmetto and 1 new case in Manatee.

There are about four families, living in the outskirts of the town, who have not been much exposed. I have had Board of Health to quarantine these, and if we can prevent these from getting fever I don't expect more than 6 or 8 more cases. Last death on 9th.

The people here, as a rule, are poor. They depend chiefly for a living on the vegetables which they ship to Northern markets. On account of the fever they will not be able to raise vegetables this winter; have been unable yet, in consequence of quarantine, to prepare for it.

Five dollars which Dr. Murray sent to help the needy is every cent of help Palmetto has received from the charitable. They can boil their bedding (quilts, blankets, etc.), but I think it would be safer to destroy their mattresses. Should they be destroyed, however, nine tenths of the people could not replace them, and they argue that they have all had the fever, and are not willing to destroy their property, unless they were able to replace it, to prevent the possibility of some one else getting the fever. Our county Board of Health is too poor to relieve us.

On September 22d I discharged two guards, McLean and Pickens, and have had one do the work formerly done by these two. This guard has been necessary, and will be so long as we have to keep up the quarantine. Very respectfully,

M. B. HARRISON.

The following inspection reports have been received from Sanitary Inspector Hartigan:

October 21, 1888.

Sanford, Orange County, Fla., is situated on the south shore of Lake Monroe, at the head of navigation for large steamers on the St. John's River. It is a business center and distributing point, its streets are broad and regular, the soil is a sandy loam. In addition to the water facilities, five railroads enter the city, placing it in rapid communication with every section of the country. The town is on a broad plain, rising from the lake evenly, and reaching an elevation of forty feet in less than a mile, thus favoring thorough drainage. Immediately

adjacent is the Sanford grant of 10,000 acres, embracing all kinds of land. Since the yellow-fever scare many improvements have been inaugurated to put the city in a good sanitary condition. A late ordinance requires the removal of plank sidewalks. Except in the business streets, which are brick or asphalt, these will be replaced by shell from prehistoric mounds that are found along the water-courses; it consists principally of periwinkles and snails and a liberal sprinkling of broken pottery.

There are twenty-five to thirty artesian wells now in use. The outlet from these is 15,000 to 80,000 gallons daily for each well, which is carried through seven or eight drains, emptying into the lake. These drains also carry off the excess of storm-water. Along the southern limits is a large trench which carries off the swamp-water and intercepts that which flows from more elevated places, thus preventing it from entering the town. These drains will soon be re-enforced by wells which will be sunk along Sixth Street, where there is a ridge, throwing the water northward into the lake, and in a southerly direction will communicate with the larger ditch above referred to.

The climate of Florida is generally regarded as the most equable in the country, not being subject to either extremes of heat in summer or cold in winter. The nearness of the Gulf Stream causes the trade-winds of the Atlantic to sweep over the land from east to west during the day, lapping moisture from its numerous lakes—the returning cool winds from the Gulf gently blowing across the State by night.

Following are meteorological data for two years at Sanford, commencing July, 1885, and ending June, 1887, furnished me by Observer Hersey, of the Signal Service:

	Mean temperature.	Highest temp.	Lowest temp.	Rain-fall.
	Deg.	Deg.	Deg.	Inches.
1885—July.....	79.5	94.7	70.0	5.52
August.....	79.7	94.9	70.0	6.75
September.....	78.5	93.8	68.4	10.73
October.....	70.4	90.4	48.2	7.48
November.....	62.7	86.5	34.9	0.29
December.....	55.6	84.9	32.0	1.85
1886—January*.....	53.1	77.0	21.0	4.77
February.....	57.4	78.7	31.3	1.18
March.....	62.2	86.0	42.4	8.17
April.....	66.1	86.0	44.2	6.60
May.....	74.4	93.1	57.6	0.89
June.....	79.3	94.7	65.0	11.08
July.....	78.1	93.3	66.8	10.21
August.....	79.6	94.4	67.9	4.12
September.....	79.3	92.4	65.5	5.01
October.....	72.6	85.8	56.0	8.75
November.....	63.9	82.2	42.4	0.79
December.....	57.9	78.0	33.3	3.20
1887—January.....	55.9	79.9	31.7	1.32
February.....	67.9	84.7	44.1	1.10
March.....	62.3	82.7	39.4	2.22
April.....	69.5	89.8	44.0	3.19
May.....	73.9	90.7	54.3	3.22
June.....	77.6	94.8	64.4	6.12

Yearly average temperature, 1885-'6, 68.24°; 1886-'7, 69.87°. Rain-fall, 1885-'6, 65.31 inches; 1886-'7, 49.25 inches. Trade-winds from N. E. and S. E. were the prevailing winds.

Sanford is supplied with water from a lake three miles south of the town. It flows by gravitation through a main two miles and a half to the reservoir, which holds 200,000 gallons. From the reservoir it is forced into the pipes by the Holly system of water-works. It is thought by Drs. Wyly and Montgomery that its purity is affected by the storm-water draining into it. Another possible source of contamination in the future, they claim, is the proximity of the cemetery, which is one fourth of a mile distant and situated on an elevation. Property owners throughout the city are gradually introducing more artesian wells. Cistern water is used to a limited extent. There are no surface wells.

* Month of severe frost, which was considered unexampled, and destroyed the fruit crops in nearly every section of the State. Only the younger orange-trees, however, suffered to any great extent, as the present year's crop is larger than any former one.

Night-soil is carted two miles southeast of town, and converted into a fertilizer. It is mixed in 20 per cent. of plaster and 6 per cent. sulphate of potash, dried cow-chips being used as an absorbent. All the privies are furnished with duplicate zinc buckets, and regularly changed. They contain both fluids and solids, and in this way are removed to the poudrette establishment. Garbage is hauled westward a mile and a half from limits of town, where it is dumped and burned.

Burial permits are required. There were eight deaths between April and October, 1888, only one being from zymotic causes.

Mayor, H. L. Lillienthall; city physician, Dr. J. S. Montgomery; population, 3,500, about one fourth of whom are colored.

An epidemic of dengue prevailed in Sanford in 1883, but there were no deaths. According to Dr. King Wyly, a leading practitioner there, the disease was ushered in abruptly by a chill, usually at night, followed by fever. This was at its height in 6 hours, and subsided generally in from 18 to 20 hours. The highest temperature noted was 105°; during remission it would fall to 100° and 101°, with subsidence of pain, nausea, and the other violent symptoms. Then apparently another attack similar to the first, and occasionally a third attack would take place. The violence of the attacks seemed to be manifested every other day. Tongue was furred, with other indications of torpid liver. Quinine generally controlled the disease. Convalescence was slow. Eruption in majority of cases, and desquamation only in the worst forms was seen. It is the opinion of the doctor and other observing physicians that as a rule dengue follows yellow fever the next year, even in districts where there has been no yellow fever. In 1882 Pensacola had yellow fever; dengue developed there in 1883, and swept over the entire State. So with Savannah in 1876 and 1877. In Tampa there is dengue this year. So surely contagious is it that a man coming where it prevails, from the country, is sure to catch it and carry it wherever he goes. One illustration given was that of a whole circus company being seized with dengue in Macon in 1877 after performing at Savannah.

Yellow fever was introduced into Sanford on the 8th of October last year by a colored family who came from Tampa with their bedding. The first person who had it outside of this family was a young white man for whom they did laundry-work. This young man's nurse in turn contracted the disease; and so it spread, until there were 150 cases in all and 8 deaths.

Respectfully submitted,

J. F. HARTIGAN,

October 22, 1888.

Orlando, the capital of Orange County, is 200 feet above the sea, and lies 120 miles south of Jacksonville. It has a metropolitan look. The population is 5,500, about one third being colored.

Probably there is no town in the State whose development has been more rapid, or whose growing tendency and permanency is more secure. It is beautifully situated in the heart of a productive country, with ample railroad facilities, and has a most enterprising population. Orlando has another attraction. Within the city limits and vicinity there are sixteen to twenty spring-water lakes, some of them quite large. From one of the purest of these her water-supply is obtained, which, according to analysis, is not excelled anywhere. The works are two miles northeast of city, and situated on an elevation a few hundred yards off is the standpipe. This is more than sufficient for all emergencies. A small portion of the population use surface wells.

The same system of zinc buckets are in use here that I found at Sanford. The matter is carted out in them a considerable distance beyond the suburbs, and there made into a fertilizer. It is mixed with dried muck, which is indigenous to the place, and then screened. It makes a very rich soil, has no offensive odor, and is in active demand.

This method of disposing of night soil, in a place like Orlando, is perhaps as good as any that can be devised, in my opinion, as it is impracticable for any town to empty sewerage into any body of water, unless it be running or tidal water; otherwise the matter would be continually accumulating where deposited, and in time become a nuisance and source of danger to the health of the community.

The cemetery is on an elevation two miles southeast of center of town. No burial permits are required, but soon will be. There were

28 deaths from May 1 to October 1, 1887, 4 being zymotic diseases. From May 1 to October 1, 1888, 27 deaths; 10 zymotic. No case of yellow fever has ever been known in Orlando.

Mayor, Dr. F. S. Chapman; city physician, Dr. R. N. Dickenson.

Respectfully submitted,

J. F. HARTIGAN.

October 24, 1888.

Bartow, the county-seat of Polk County, is the southern terminus of the Bartow branch of the Southern Florida Railroad, and of the Pemberton Ferry branch of the same road; it is also the northern terminus of the Charlotte Harbor division of the Florida Southern Railway. The town is two miles square; it was incorporated in 1884; its elevation is about 100 feet, and its soil is a dark spongy loam. Population, 2,500; about one fourth colored. Farming is the principal industry. Rich pine, live-oak, and hamack growths surround it everywhere.

The location of Bartow is most favorable for drainage. It is on a broad, flat hump, sloping north, east, and west, into a run which extends to Peace River. After the heaviest rain the water does not stand an hour.

Water is obtained principally from wells, averaging 35 feet deep. In sinking them, in every case, five or six feet of rock have to be drilled through, showing the whole town to be on a bed of rock, similar to that found on the coast; the rock is generally 30 feet below the surface. This fact affords immunity from contamination, and is the reason there are no such evil results here as are seen from wells elsewhere. After the rock is drilled a pump is sunk. There are some open wells, averaging 25 to 30 feet, from which water is obtained on the surface of the rock; this is far inferior to that below the rock. About 10 per cent. of the population use cistern water.

The same system of buckets is used here as at Sanford and Orlando. The soil, after disinfection with lime and copperas, is carted two miles from town to a dumping-ground in a low place near Peace River, which empties into Charlotte Harbor and the Gulf.

Mayor, Dr. J. P. Statham; secretary Board of Health, Dr. F. M. Wilson. No burial permits are issued. The cemetery is two thirds of a mile from center of town.

Dr. Wilson states that during five years' practice there have not been more than ten cases of typhoid fever, and none of dengue.

Respectfully submitted,

J. F. HARTIGAN.

October 23, 1888.

Kissimmee, the county-seat of Osceola County, is situated at the head of Lake Tohopekaliga, on the South Florida Railroad. It is 54 feet above the sea, and has a population of 2,000. The town only dates from 1883, when the Okeechobee Drainage Company, who had a contract with the State, commenced the gigantic undertaking of reclaiming 5,000,000 acres of land. Canals were cut communicating with the chain of lakes and Kissimmee River, leading down 75 miles to Lake Okeechobee and the Gulf. One of the results of these operations is the establishment of a mammoth sugar-mill, and plantations 6 miles from the town on the richest kind of muck soil. Thousands of acres of newly drained lands in the vicinity are now being utilized where steamboats floated only three years before. The sugar industry, therefore, of South Florida bids fair to rival the orange.

Cistern water is principally used, although water from the lake is being gradually introduced. There are some few surface wells.

Open-air privies are in use almost exclusively, and most of the matter is systematically disinfected and removed a mile outside, where it is burned with sweepings from the town. A large proportion, however, is buried in the yards.

Ditches are dug for drainage, which flows toward the east and empties into the lake. About the center of town is a ridge running north and south, and sloping east and west, emptying into the lake in the east, and in the west the storm-water is carried off from a valley along a circuitous route into the lake a mile south of the town.

No burial permits are issued, but an ordinance has just been passed requiring them. The present cemetery is half a mile from center of town. It has been ordered to be abandoned and removed a mile and a half north. There were not more than 6 deaths from May 1 to October 1, 1888.

Mayor, J. W. Aderhold; health officer, Dr. S. G. Worley. Dr.

Worley says he has seen no typical cases of malarial or typhoid fever. "Dengue," however, prevailed to a certain extent; it simulates typhoid, but is amenable to antiseptic treatment, such as salol, creasote, and bichloride of mercury. It attacks all ages. Some deaths have occurred, perhaps two per cent. But the disease has practically subsided since the surface wells have been in a measure abandoned. The deaths that have taken place, he thinks, seem to have been due to septic poisoning, inasmuch as suppuration of the parotid glands has occurred in some instances.

When the doctor first came here, six years ago, he treated it for typhoid, but the result was unsatisfactory. He therefore thought of the septic theory, from its clinical course. Unlike typhoid fever, there was a tendency to remit from time to time; besides, the highest temperature was in the morning. It also lacked the usual incubative period of that disease. Quinine seemed to intensify the nervous symptoms, which predominated in every case. He observed no eruption or desquamation.

The disease commenced abruptly, accompanied by gastric irritation and vomiting, temperature sometimes reaching 106°. It only assumed the form of typhoid or continued fever after the third or fourth day, then prostration and low muttering delirium; in some instances sudamina, rose-colored spots, hæmaturia, etc. He claims that he has uniformly aborted the disease since he adopted the salol treatment. He had only seen it among those who had used surface water. In every instance it was traceable to these wells. It is known by various names, as physicians thought fit to call it, such as typho-malarial dengue, relapsing fever, etc. It is a disease of South Florida, and, in his opinion, is a hybrid form of typhoid, modified by the peculiar conditions of the climate, and quite amenable to salol and like antiseptic measures.

Respectfully submitted,

J. F. HARTIGAN.

October 22, 1888.

Titusville, the county seat of Brevard County, is situated on the west bank of Indian River, 12 miles from its head, 18 miles from the ocean. It was incorporated in 1886; soil a sandy loam. A branch of the Jacksonville, Tampa, and Key West Railroad enters the place from Enterprise Junction, over which road visitors come to pass the winter along the banks of the river down to Lake Worth, 180 miles distant.

Following is Titusville meteorological register for the past year:

	Mean temperature.	Highest temp.	Lowest temp.	Rain-fall.
	Deg.	Deg.	Deg.	Inches.
1887—July.....	80.5	98.8	67.9	7.82
August.....	80.8	94.4	69.4	2.47
September.....	77.8	91.7	64.0	6.32
October.....	74.8	87.0	44.8	12.17
November.....	65.4	81.9	32.5	0.88
December.....	63.2	81.0	40.2	1.91
1888—January.....	62.5	80.5	36.5	0.74
February.....	63.7	81.0	37.9	7.11
March.....	63.4	87.0	41.0	2.16
April.....	71.6	86.8	56.0	2.59
May.....	75.3	88.0	62.0	2.92
June.....	78.7	93.1	60.1	6.56

Yearly average temperature, 71.47°; rain-fall, 53.65 inches; prevailing winds, S. E.

A ridge runs through the town north and south, 16 feet above the river, gradually sloping on the east to the river and west to a little communicating stream. Four main ditches carry off the rain-fall.

Water, so far, is obtained principally from driven wells, averaging 20 feet deep. It is considered wholesome. Several cisterns are also in use. About six weeks ago an artesian well was begun. At about 130 feet, water, strongly impregnated with salts and sulphur, began to flow. At the present time 700 feet have been reached without any perceptible change in it. Already nearly 600 feet of rock has been drilled, and the contractor thinks when he penetrates this he will find a vein of fresh water. At Smyrna, 40 miles north, and Daytona, 55 miles, also south at Rock Ledge, 20 miles, a pure water is obtained at only 150 feet deep.

Night-soil is carted off 2 miles beyond the town, and, after disinfection,

is used for agricultural purposes. Garbage is gathered together as far as practicable and burned. It is intended to improve the drainage and sewage system the ensuing winter.

No burial permits are issued. There were five deaths from April to October, 1888, one being from typho-malarial fever, contracted away from his home.

The cemetery is situated three miles from town, about eighteen feet above water-level.

Mayor, George B. Rumph; physician and member county Board of Health, Dr. B. R. Wilson; population, 1,200; one third colored.

Respectfully submitted,

J. F. HARTIGAN.

TAMPA, FLA., October 27, 1888.

In compliance with Dr. M. B. Harrison's request, I forward the letters herewith inclosed.

Dr. Pelot denied the existence of yellow fever at Manatee last fall and this summer. Like many other physicians in the State, he either does not know yellow fever when he sees it or else will not admit it on account of popular pressure. I am thoroughly satisfied that unless you remain in charge of the State and keep up a course of investigation during the winter there is great probability of the fever hibernating again at Manatee and other points.

You have experienced for yourself how senseless the people and press of Florida can be when the truth conflicts with local interest of any community. I am determined after this season to have nothing to do with public health matters, unless paid a liberal salary, and have so written to the Governor. I will no longer hold any office whose emolument is abuse.

Unless the Governor calls an extra session of the Legislature this body will not convene till in April, when the season for eradicating the disease will have passed; hence the importance of your remaining in charge. Though more than I, do not see how you can accomplish much without the cordial support of these internal county boards of health.

Four new cases in the last two days. No deaths since last report.

Very respectfully,

JOHN P. WALL.

PALMETTO, FLA., October 24, 1888.

I am placed in an awkward position, and deem it my duty to write you for advice and instructions.

You have been informed that Dr. Pelot, a local physician at Manatee village, has denied the existence of yellow fever on the Manatee River, while, in the opinion of Dr. Wall, Dr. Murray (United States Marine-Hospital Surgeon), and others, we have had it here, at least since last July. Dr. Murray was ordered off from here about September 1st, leaving me in charge as inspector, telling me to look after the yellow fever on the river, and make weekly reports by telegraph to you until you ordered me to discontinue them.

I understood that it was my duty to see all "suspicious cases" here, and whenever and wherever I found a case of yellow fever on Manatee River, to report it.

I have done so up to the present time. Last week I was sent for to see a case at Manatee. When I got there I found it a well-marked case of yellow fever, in my judgment; that Dr. Pelot was attending the case, and, while I did not see Dr. Pelot, I understand he pronounces it a case of "dengue." Through one of the members of the Board of Health, I learned to-day that another member of the same family took fever yesterday, and that he saw a case of Dr. Pelot's yesterday, at Braidentown, which, in his judgment (and he is an intelligent man, of a large family, and all his children have just had yellow fever), was a well-marked case of yellow fever. I intended visiting these cases to-day, but the President of our Board of Health, a brother-in-law of Dr. Pelot, made such remarks as to deter me. Such as "Dr. Pelot was an eminent man and physician, who had been and was respected; that he had the confidence of at least many people; and that while Dr. Murray, a surgeon, might be sent by the Government to inspect suspicious cases, he, Dr. Murray, could not delegate that authority to another; that Dr. Pelot did not like any other physician, who had no authority to do so, to visit his patients without an invitation from him, or at least having his consent to do so, etc." Such was about the substance of what he said.

Now, then, I am quite well convinced that some one is opposed to having me find yellow fever on the south side of the river, either at

Manatee or Braidentown; and I fully believe, from information, that there is at least one case in each of those places; but, until or unless clothed with authority from you, I can have nothing more to do with Dr. Pelot's cases. Very respectfully, etc., M. B. HARRISON.

October 26, 1888.

Fort Meade, Polk County, incorporated June, 1885, is situated ten miles south of Bartow, on the Florida Southern Railway. It is embowered in orange groves and in the heart of a rich pine and hummock country. The population is 800, 10 per cent. being colored.

Here also, as at Bartow and other Florida towns, a ridge runs north and south, adapted by nature for the important purpose of drainage; in the east it slopes to Peace River, and westerly to a run which communicates along a circuitous route with the river.

About one half of the population use cistern water. The other half is obtained from wells which are sunk about twenty feet through a clay-bed, then bricked and cemented to keep out the surface water. In some cases the wells are curbed from the bottom with pine boards. The country is well supplied with fresh-water springs.

A mild form of remittent or bilious fever prevails, which is easily managed. Typhoid is rare and only seen in the country. Dr. Weems attributes its cause to drinking rotten limestone water.

Open-air privies are the rule, but there is no ordinance requiring methodical removal. An inspector, however, requires the people to use dry earth and lime, and in most cases it is then converted into a fertilizer.

The cemetery is within the corporate limits. No burial permits. Mayor, William Thompson; member county Board of Health, Dr. W. L. Weems. Respectfully submitted, J. F. HARTIGAN.

October 26, 1888.

Arcadia, De Soto County, is 50 miles south of Bartow, on the Florida Southern Railway, and has a population of 250.

Mayor and physician, Dr. Edward Greene.

Five or six stores on the line of railroad constitute the business portion. On an oak ridge a few hundred yards west, across a branch, 30 or 40 houses are scattered.

The water supply is from surface wells. There is no system of disposal of the contents of privies, which are generally above ground.

With the exception of ridge above mentioned, the vicinity is low and flat, and in some places swampy. Remittent and intermittent fevers are the prevailing diseases. Cattle-raising, principal industry.

Respectfully, J. F. HARTIGAN.

October 26, 1888.

Fort Ogden, De Soto County, is 10 miles south of Arcadia, on same line of railway. Population, including surrounding country, about 350.

Mayor, I. O. Carr; physician, Dr. O. E. Rush.

This place is higher than Arcadia, and, in addition to the cattle industry, orange culture is considerable.

The water supply is from wells. There is no systematic disposition of night-soil. Respectfully, J. F. HARTIGAN.

DEPARTMENT OF HEALTH,
Brooklyn, N. Y. No date.

DEAR SIR: John Jellard, captain steamship Ceareuse, Red Cross Line, from Pernambuco and Para, died in this city yesterday, 9 P. M., of yellow fever.

Vessel arrived at quarantine October 22d, city same day. Captain taken sick and in bed Friday the 19th.

Vessel ordered out of city's jurisdiction.

Respectfully yours, R. C. BAKER, M. D.

J. B. HAMILTON,

Supervising Surgeon-General.

TAMPA, FLA., October 24, 1888.

DEAR SIR: For the week ending to-day there have been only two cases of yellow fever reported, and one death on the night of the 22d inst. This patient had no physician, and I was called to see her an hour or so before she died. I have heard of a few other cases of fever—probably as many as four or five—which were probably cases of the fever.

If new material can be kept out of here, the fever must soon cease. For the past week the weather has been very warm for the season.

The recent death makes a total of six for the season so far since the 7th of August. Very respectfully,

JOHN P. WALL, M. D.,
President Board of Health.

Surgeon-General J. B. HAMILTON, Washington, D. C.

SURGEON'S OFFICE,
FORTRESS MONROE, VA., October 29, 1888.

SIR: I have the honor to report that seaman Tore Sanchez, of the Spanish steamship Buenaventura, died in hospital on Fisherman's Island, on the 27th instant, of yellow fever. The ship will be thoroughly cleansed and disinfected before her release from quarantine. No other cases have occurred. Very respectfully,

THE SURGEON-GENERAL, L. L. WILLIAMS,
U. S. MARINE-HOSPITAL SERVICE, P. A. Surgeon, M.-H. S.
Washington, D. C.

Gainesville, Fla.—Dr. Martin telegraphs as follows:

October 26th: "One death, D. D. Sillghman (white)."

October 26th: "One new case (colored); 2 cases under treatment."

October 27th: "One new case (colored)."

Enterprise, Fla.—Dr. Posey telegraphs as follows:

October 29th: "Seventeen cases on hand; 2 deaths in last 48 hours; area of infection extending into country."

November 1st: "One new case to-day; no deaths. Census being taken shows large idle colored population, and unless epidemic subsides shortly will have to be fed."

Palmetto, Fla.—M. B. Harrison telegraphs as follows:

October 30th: "For week ending 6 P. M., Monday, October 29th, there were at Palmetto, Fla., new cases of yellow fever, 3; death, 1. Total number cases to date, 82; total number deaths to date, 8."

Live Oak, Fla.—Passed Assistant Surgeon Urquhart telegraphs as follows:

October 28th: "Dr. Hankins reports a case of yellow fever at this place. He desires an expert to investigate it. I have had the house quarantined."

October 30th: "No mail is put off here. Cars will have to be moved. There are two more people ailing here."

November 1st: "Dr. Hankins reports 4 cases here. Will go with (fumigating) cars immediately to Dupont. The F. R. and N. train is ordered not to stop here. No passengers from infected points to-day."

Mayor Carroll telegraphs November 1st: "Can you send a yellow-fever expert here immediately?"

Camp Perry, Fla.—Surgeon W. H. H. Hutton telegraphs as follows:

October 25th: "Morning report. Present: Officers, 5; guards, 11; employees, 35; refugees arrived, 9; discharged, 6; remaining, 134. Fever camp, 4."

October 26th: "Morning report. Present: Officers, 5; guards, 11; employees, 35; refugees arrived, 26; discharged, 8; remaining, 152. Fever camp, 4—all convalescent."

October 26th: "Dr. Posey reports 12 cases and 2 deaths at Enterprise; also great destitution. Wants nurses and supplies. Will instruct him to apply to Dr. Porter for supplies."

October 27th: "Mr. Upton, of Uptonville, 12 miles north, returned there from Baldwin Monday; Tuesday reported sick. Sent Guitéras and Posey, who reported case suspicious. Brought Upton to camp yesterday; to-day brought a second case to camp. Have prohibited passenger-trains stopping there. Fumigated Upton's premises, and will keep close watch on the place."

October 27th: "Morning report. Present: Officers, 5; guards, 11; employees, 38; refugees arrived, 28; discharged, 17; remaining, 163. Fever camp, 5."

October 28th: "Morning report. Present: Officers, 5; guards, 11; employees, 38; refugees arrived, 36; discharged, 14; remaining, 185. Fever camp, 5—last two cases brought from Uptonville."

October 29th: "Morning report. Present: Officers, 5; guards, 11; employees, 38; refugees arrived, 3; discharged, 26; remaining, 162. Fever camp, 5."

October 30th: "Morning report. Present: Officers, 4; guards, 11; employees, 38; refugees arrived, 5; discharged, 20; remaining, 147. Fever camp, 4. Dr. Guitéras examined every man, woman, and child, and every house and room in Baldwin, and did not find a case of sickness of any kind. Place perfectly healthy."

October 31st: "Morning report. Present: Officers, 4; guards, 11; employees, 39; refugees arrived, 6; discharged, 30; remaining, 123. Fever camp, 5."

November 2d: "Morning report. Present: Officers, 4; guards, 11; employees, 40; refugees arrived, 3; discharged, 11; died, 1; remaining, 124."

Jacksonville, Fla.—Dr. J. Y. Porter telegraphs as follows:

October 25th: "New cases, 71; deaths, 2; total cases, 3,974; deaths, 339. Patients, St. Luke's, 10; Sand Hills, 14."

October 25th: "President Board of Health at Enterprise wires this A. M. nine cases; six in critical condition; himself only physician up. Need fumigating material and everything for taking care of population of 500. I have wired that Posey would go."

October 26th: "New cases, 23; deaths, 2; total cases, 3,997; deaths, 341. Patients, St. Luke's, 12; Sand Hills, 12."

October 27th: "New cases, 46; deaths, 4; total cases, 4,043; deaths, 345. Patients, St. Luke's, 10; Sand Hills, 13."

October 28th: "New cases, 16; deaths, 3; total cases, 4,059; deaths, 348. Patients, St. Luke's, 10; Sand Hills, 12."

October 29th: "New cases to-day, 36; deaths, 4; total cases reported, 4,095; deaths, 352. Patients, St. Luke's, 11; Sand Hills, 9."

October 30th: "New cases, 32; deaths, 1; total cases, 4,127; deaths, 353. Patients, St. Luke's, 7; Sand Hills, 6."

November 1st: "New cases, 56; deaths, 2; total cases reported, 4,210; deaths, 356. Patients, St. Luke's, 11; Sand Hills, 4."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Euteric fever.	Seriet fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y....	Oct. 27.	1,539,908	673	..	..	..	..	13	16	23	6	14	..
Philadelphia, Pa....	Oct. 20.	1,016,758	337	..	..	..	..	2	4	..	2	3	..
Brooklyn, N. Y....	Oct. 27.	805,855	296	1	..	..	..	12	4	20	..	5	..
Chicago, Ill....	Oct. 27.	800,000	277	..	..	..	..	..	..	..	..	..	..
St. Louis, Mo....	Oct. 20.	440,000	169	..	..	..	..	6	1	14	..	2	..
Baltimore, Md....	Oct. 27.	431,879	157	..	..	..	..	7	..	2	..	1	..
Boston, Mass....	Oct. 27.	415,000	195	..	..	..	..	8	1	13	1	1	..
San Francisco, Cal....	Oct. 19.	300,000	100	..	..	..	..	2	..	..	..	..	..
Cincinnati, Ohio....	Oct. 27.	255,139	98	..	..	..	..	3	..	5	..	..	..
New Orleans, La....	Oct. 20.	248,000	121	..	..	..	..	..	..	..	..	1	..
Pittsburgh, Pa....	Oct. 30.	230,000	73	..	..	..	..	11	..	5	..	..	..
Washington, D.C....	Oct. 20.	225,000	106	..	..	..	..	9	..	2	..	1	..
Washington, D.C....	Oct. 27.	225,000	92	..	..	..	..	11	..	2	..	2	..
Louisville, Ky....	Oct. 27.	200,000	60	..	..	..	..	9	..	2	..	..	..
Milwaukee, Wis....	Oct. 27.	195,000	66	..	..	..	..	3	3	1	2	..	..
Kansas City, Mo....	Oct. 27.	180,000	40	..	..	..	..	5	..	2	..	..	..
Minneapolis, Minn....	Oct. 20.	180,000	59	..	..	..	..	7	..	6	..	..	..
St. Paul, Minn....	Oct. 20.	175,000	49	..	..	..	..	8	..	4	..	..	..
Newark, N. J....	Oct. 23.	174,954	82	..	..	..	..	3	1	10	..	..	..
Rochester, N. Y....	Oct. 27.	120,000	32	..	..	..	..	1	..	4	..	..	..
Denver, Col....	Oct. 26.	96,000	32	..	..	..	..	8	..	..	..	..	..
Columbus, Ohio....	Oct. 27.	93,000	25	..	..	..	..	..	..	1	..	..	..
Toledo, Ohio....	Oct. 19.	80,000	17	..	..	..	..	..	..	..	..	..	..
Nashville, Tenn....	Oct. 27.	65,153	27	..	..	..	..	1	..	..	..	1	..
Fall River, Mass....	Oct. 27.	65,000	22	..	..	..	..	2	1	..	1	..	..
Charleston, S. C....	Oct. 20.	60,145	43	..	..	..	..	..	..	..	..	..	..
Evansville, Ind....	Oct. 27.	53,000	12	..	..	..	..	1	..	1	..	..	..
Savannah, Ga....	Oct. 26.	52,827	23	..	..	..	..	..	..	..	..	..	..
Lynn, Mass....	Oct. 13.	50,000	13	..	..	..	..	1	1	..	..	..	..
Manchester, N. H....	Oct. 20.	41,000	14	..	..	..	..	..	..	4	..	..	..
Mobile, Ala....	Oct. 27.	40,000	12	..	..	..	..	..	..	..	..	..	..
Portland, Me....	Oct. 27.	40,000	13	..	..	..	..	..	..	2	..	..	..
Wheeling, W. Va....	Oct. 20.	35,000	..	..	..	..	..	..	..	..	..	..	..
E. Saginaw, Mich....	Oct. 27.	33,000	8	..	..	..	..	..	..	1	..	..	..
Davenport, Ia....	Oct. 20.	30,084	..	..	..	..	..	..	..	1	..	..	..
New Albany, Ind....	Oct. 27.	30,000	4	..	..	..	..	2	2	..	..	..	..
Wheeling, W. Va....	Oct. 27.	30,000	4	..	..	..	..	..	..	..	..	..	..
Altoona, Pa....	Oct. 20.	29,546	5	..	..	..	..	..	..	..	..	..	..
New Bedford, Mass....	Oct. 27.	26,845	14	..	..	..	..	1	..	2	..	..	..
Auburn, N. Y....	Oct. 27.	26,000	8	..	..	..	..	..	..	1	..	..	..
Haverhill, Mass....	Oct. 27.	25,000	11	..	..	..	..	..	..	..	..	..	..
Jackson, Mich....	Oct. 20.	22,500	6	..	..	..	..	..	..	..	..	..	..
Poughkeepsie, N. Y....	Oct. 19.	22,000	7	..	..	..	..	..	..	3	..	..	..
Newport, R. I....	Oct. 25.	20,466	10	..	..	..	..	2	..	..	..	..	..
Pensacola, Fla....	Oct. 27.	15,000	10	..	..	..	..	2	..	..	..	..	..

Experimental Typhoid Fever.—"After reviewing the literature of the subject of experimental typhoid fever," says the "Lancet," "and after detailing the results of some fresh experiments, Dr. Perret, in the

'Province médicale,' No. 16, comes to the conclusion that Eberth's bacillus freshly taken from the human body, whether living or dead, does exhibit a poisonous effect when injected into certain animals. The resulting experimental disease, however, does not bear a faithful resemblance to true typhoid fever, but is really a septicæmia, perhaps capable of a certain measure of attenuation, as seemed to be indicated by the recent researches of Perret and others."

Changes of Address.—Dr. Joseph A. Andrews, to No. 39 West Thirty-second Street; Dr. W. F. Mittendorf, to No. 140 Madison Avenue.

ANSWERS TO CORRESPONDENTS.

No. 237.—The time and place of meeting of the next board for examining candidates for appointment in the Marine-Hospital Service can not now be stated, but usually such a board is convened once a year (in the spring). A board for examining candidates for appointment in the medical corps of the army (consisting of Surgeon George M. Sternberg) Surgeon Henry McElderry, and Assistant Surgeon Edward C. Carter, was ordered to meet in New York on the 1st of October, "or as soon thereafter as practicable."

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE TREATMENT OF
ROTARY LATERAL CURVATURE OF THE SPINE.*

By R. H. SAYRE, M. D.

I SHALL not this evening enter fully into the subject of the ætiology of rotary lateral curvature of the spine, as it would occupy more time than I have at my disposal, but shall confine my remarks almost exclusively to the diagnosis and treatment.

I would remark here that many cases begin prior to the seventh year, but are not noticed by the parents until a much later period, or, if noticed, are not considered of sufficient importance to require treatment, and it is to this cause that almost all the inveterate cases with frightful deformity are due, for there is no disease which more clearly illustrates the proverb that "an ounce of prevention is worth a pound of cure."

In making the diagnosis of any curvature of the spine it is necessary to have the back completely exposed. The clothing should be fastened tightly about the hips just above the trochanters and showing the cleft between the buttocks. The undershirt is to be removed and fastened around the neck by the sleeves, hanging in front of the chest like an apron. The shoes should be removed and the patient then stand with the back turned toward you in the attitude she is accustomed to assume. At first you may hardly notice any curvature, but in a few moments the patient will relax her muscles and allow herself to sag, and you will notice a slight bending of the spine to one side. Often there is only to be noticed a slight flattening of the normal curve at the waist, and the space between the trunk and the two arms as they hang by the sides will be less on one side than on the other. One hip may seem to be higher, possibly on account of actual difference in the length of the legs, oftener on account of the flattening of the curve above the pelvis on one side and abnormal sinking in at the corresponding point on the other. It may be that the angle of one scapula is higher than the other, and that their inner borders are not parallel.

In the commencement there is merely a twisting of the spine in a lateral direction, accompanied by a rotation of the bodies of the vertebræ on one another, but later on there is added to this a curving of the ribs, and the amount of this curving of the ribs is the most prominent factor in determining the amount of improvement to be expected in any given case. To show the amount of curvature of the ribs the patient should stand with the back to the surgeon, who should be seated, and grasp her legs with his knees while his hands steady her hips. She should then bend forward toward the ground, touching it with her fingers if possible. In this position the shoulder-blades are drawn forward and the amount of difference between the ribs on the opposite sides of the body can easily be noted. If this

is slight, the chances for improvement are very much more favorable, as when there is a marked angle in the ribs it is impossible wholly to rectify the deformity.

With the patient in the erect position the distance from the navel to each nipple should be noted, as this is one of the early signs of rotation in lateral spinal curvature. I am aware that no importance is attached to this by some authors, as they say one nipple may be higher than the other without any spinal curvature; but, while I acknowledge the truth of this remark, I nevertheless think the measurement of value, as I have seen cases where there was a difference of an inch or more in which after treatment there was the same distance from each nipple to the umbilicus, showing the difference to have been due to the position of the body and not to abnormal location of one breast.

In order to preserve a record of the case, before attempting to rectify the curve I make it a rule to photograph the patient, sometimes taking a lateral as well as a posterior view, in order to show the projection backward of the scapula on the convex side, which always occurs, and in some cases I have also taken front views, as the deviation of the body from the straight line is often as marked in front as at the back.

If the curvature is due to any inequality in the length of the legs, the short one should be built up by means of a thicker sole and heel on the shoe, until the curve is obliterated as nearly as possible, and in such cases it is advisable to drop the clothing so as to expose the gluteo-femoral fold, and use this as a guide in determining the length of the legs. In finding the exact difference between the legs I use a number of blocks of well-seasoned wood, eighteen inches long by six inches wide, and ranging from an eighth of an inch to an inch in thickness, placing them one by one under the short leg until the amount is reached which renders the back straight, or as nearly so as possible. The suggestion of Dr. Morton, of Philadelphia, in this regard is well worth mention, which is to have boards six or eight feet long and of various thicknesses, and, after having determined what seems to be the right amount to be added to the short leg, to make the patient walk with the long leg on the floor and the short one on a board of this thickness, noticing meanwhile whether this corrects the limp which is due to the inequality of the legs, and, if it does not, changing the board until the proper height is attained.

In the treatment of lateral spinal curvature we must remove the cause if possible. If there is inequality of the legs, build up the short one; if there is paralysis of any sort—infantile, post-diphtheritic, or any other—use galvanism or faradism as the case may require, with nerve tonics internally, and massage of the affected muscles. If there is torticollis as a foundation for a lateral curvature in the dorsal or lumbar region, rectify the torticollis first by stretching, tenotomy, electricity, or all, according to the needs of the case. If there is strabismus or inco-ordination of ocular muscles, or defective vision of any sort, let that be remedied, and then you are ready to turn your attention to the curved spine itself.

Any or all of the conditions I have mentioned above may

* Read before the Alumni Association of Bellevue Hospital, October 3, 1888.

be the starting-point of lateral spinal curvature, but in many cases we find none of them present, and here we may meet with rhachitis as a cause.

These cases begin as the very slightest deviations from the normal, and, being favored by abnormal development of certain muscles, insufficient exercise of others, aided by vicious habits of sitting, standing, and lying, the slight curve which at first was a simple change in the relative positions of the vertebræ and ribs, which could be voluntarily rectified by muscular action, becomes a bony deformity which it is impossible to remove.

The ribs and vertebræ, however, are capable of being altered in their relative positions by muscular movements, and as the disuse of the muscles is in a vast majority of cases the cause, so the proper use of them must be the cure of the deformity. When the deformity is slight I rely on gymnastic exercises alone for a cure, but if the case is more advanced, I find that the patient is not able to retain by voluntary effort so good a position of the body as can be obtained by partial self-suspension by means of a pulley and head swing. (See Figs. 1 and 2.) I therefore in these cases apply to the patient thus suspended a plaster-of-Paris

tion obtained by self-suspension, and was to be supplemented by proper exercises, yet I often see patients who have been put in plaster-of-Paris corsets and never told to exercise, the physician apparently not recognizing the fact that the jacket was only an adjuvant.

This may be because of the difficulty of understanding many of the exercises which are used in the treatment of lateral curvature from a written description, and so I have this evening brought two patients here to practically demonstrate before you this part of the treatment. One of these girls I have concluded to treat by gymnastics alone (Figs. D and E); the other I am still watching, as she has been but a short time under treatment, and I have not yet decided whether or not a jacket will be necessary.

I wished to have here also a patient who wore a jacket for some years, whose back now shows hardly any curvature, but she was unfortunately prevented from coming by professional engagements, she now being on the stage, where no one, seeing her act, would dream of her having had a curved spine. I have also two jackets to exhibit the improvement which can be made in the worst sort of cases. These jackets are the first and sixth which were applied to



FIG. 1.

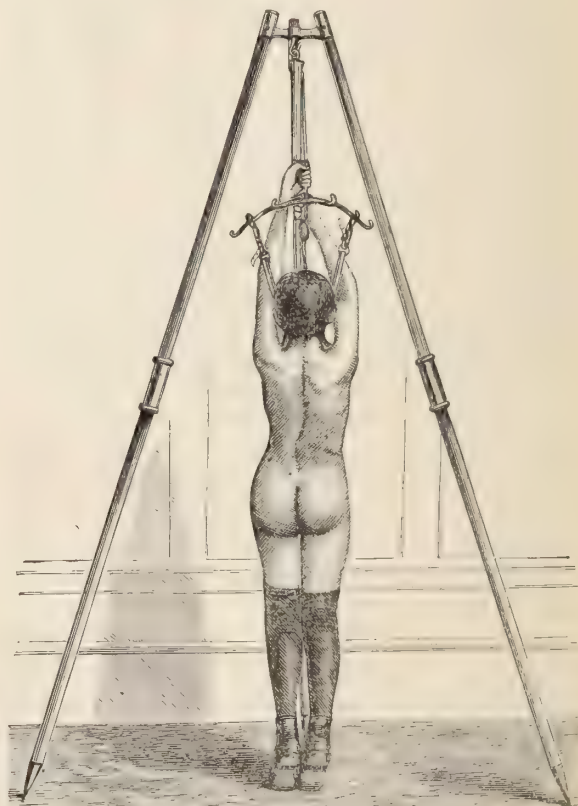


FIG. 2.

jacket, which is cut down in front, supplied with lacings, and then worn in the daytime, being applied in the morning while the patient is partially self-suspended, and removed at night before sleeping. The patient exercises in the morning before the corset is applied and at night after it is removed.

Although my father has for years taught that the corset was only useful as a means of retaining the improved posi-

tion, the patient whose photographs are now passing around, showing the results of six months' treatment and the improvement in position gained by partial self-suspension. When she was standing, the distance from the navel to the right nipple was two inches and three quarters greater than from the navel to the left nipple, and while self-suspended only half an inch, and with the corset on she was an inch and an eighth taller than without it. When

first seen, a plumb-line from the chin passed to the right of the right foot, and the left nipple was an inch to the right of this line. Behind, the plumb-line from the occiput passed an inch to the left of the inner border of the left scapula. In the photographs of the first and sixth jackets I have drawn perpendiculars through the axilla and hip on each side, showing the improvement that has taken place in the lateral deviation. (See Fig. 3.) This patient I am sure would not have made so marked an improvement if treated by gymnastics alone. She had been under instrumental treatment for nine years before I first saw her, during which time she grew progressively worse, and, having had extensive personal experience with braces of various kinds, she gives emphatic testimony as to the superiority of the plaster-of-Paris jacket as a means of support. The history of this case is a repetition of that of many others

whose curvature, beginning in a very slight twist, as shown not only by the patient's statements but by photographs taken at the time, has, in spite of the constant wearing of instruments, gone on from bad to worse. These patients have come from the hands of various surgeons of large ex-

perience, so I am convinced this result was not due to some particular kind of machine or to inexperience on the part of the surgeon, and, as the patients in my hands have been most anxious and willing to follow out instructions, I can not lay the fault at their door, and therefore am forced to the conclusion that the various forms of instruments I have seen for pushing the spine straight are worse than useless, and especially as in some cases the deformity had been quiescent for years, and after the application of mechanical support rapidly began to grow worse.

I have frequently seen patients with machines on in which they were more crooked than with no support, and I show you here the photographs of a boy who came to me two years ago

wearing a brace in which he was more curved than without it. I sent him to the photographer and had his picture taken with and without his machine, and then in-

structed him in some exercises. These he continued at home twice a day with his father's help, coming to see me at very infrequent intervals; but, though he did not come nearly so frequently as I should have desired, he has, however, made a vast change in his back by exercises alone, without any artificial support, as seen in the photograph I took a short time since. (See Figs. A, B, and C.)

The various exercises I shall now describe may be re-



D, F. S., June 18, 1888.



E, F. S., August 30, 1888, treated by exercises.



F, R. L., July 6, 1887.



G, R. L., March, 1888, treated by exercises.

laid on the floor and the patient lies prone, the arms at right angles to the trunk, palms down, face turned to the convex side, and the back as straight as possible. (See Fig. 4.) The patient supinates the hands, throws the scapulæ well back, raises the hands from the floor, and lifts the trunk,

With the hands behind the head and the elbows raised, the body is swayed toward the convex side, the patient trying to "pucker in" the bulging ribs and *not* to bend in the lumbar concavity. The feet are fixed as before.

With the arm on the side of the convexity under the body, the other arm over the head, the heels fixed, the patient raises the trunk from the floor.

Sometimes the arm on the side of the concavity is put on the opposite buttock (see Fig. 7), while the patient raises the trunk (see Fig. 8). Sometimes the arm on the convex side is put on the buttock (see Figs. 9 and 10), and in cases of marked lordosis, with great stooping of the shoulders, both hands are put on the buttocks while the patient raises the trunk.

The patient now lies on the back, arms at the sides, palms up, and lifts first one foot in the air, while the surgeon makes resistance graduated to the patient's power; repeated, say, five times. The same is done with the other foot, and then with both. The feet are next separated and then brought together once more while the surgeon resists. Each leg then

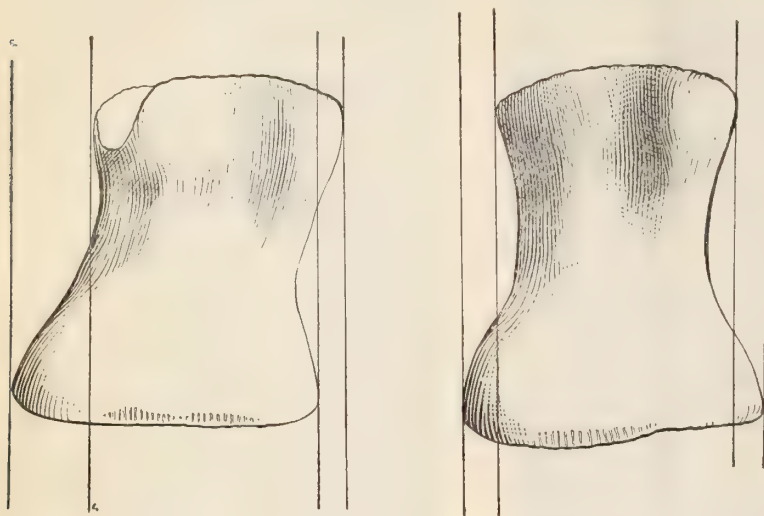
while the surgeon holds the feet down. (See Fig. 5.) This is repeated three times; later on it can be done oftener. The breath should not be held during any of these exercises, but the patient should breathe naturally. If necessary to secure this, make them count out loud while exercising.

With the hands behind the head, the patient raises the elbows from the floor, and raises the trunk as before, the feet being held by the surgeon. (See Fig. 6.)

describes a circle, first from within out, then from within in.

If there is special weakness at the ankles, with a tendency to flat-foot, the patient flexes the foot and extends it against resistance, and turns the sole of the foot toward its neighbor, the surgeon resisting, and it is then forcibly everted again by the surgeon, the patient resisting.

The patient now lifts the arms from the sides, passing



First jacket.

FIG. 3.

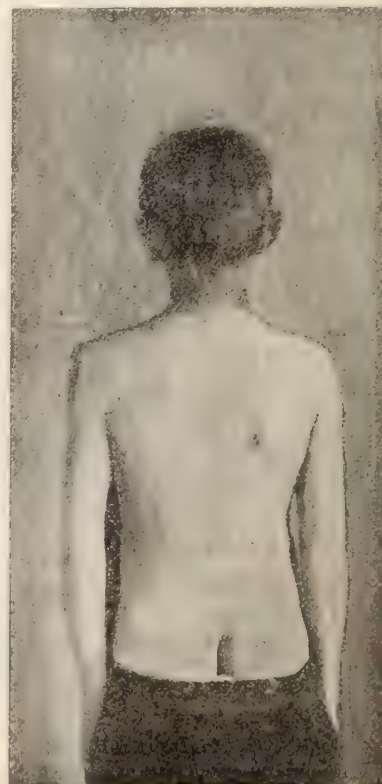
Sixth jacket.



A, E. M. as seen first: July 5, 1886, wearing a brace.



B, E. M. on the same day, without the brace, the back being straighter without it than with it.



C, E. M., August 18, 1888, treatment having consisted simply of exercises.

perpendicularly to the floor till they are stretched as far beyond the head as possible, and then, going at right angles to the trunk and parallel with the floor, returns them to the sides, palms up.



FIG. 4.

While the heels are held, the patient rises to the sitting position, hands at the sides; then she rises from the floor with the hands behind the head and the elbows at right angles to the trunk.



FIG. 5.

The patient now stands with the heels together, toes turned slightly out, hands behind the head, elbows at right angles to the trunk (see Fig. 11); then rises on tip-toe, bends the knees and hips, keeping the back as straight and erect as possible, and rises up once more. With the arm on the



FIG. 6.

concave side high above the head, the arm on the convex side at right angles to the body (see Fig. 12), she rises on

tip-toe, bends the hips, knees, and ankles so as to squat, then rises and stands. All this time care must be taken to



FIG. 7.

push the body as straight as possible, and gradually educate the patient to hold it so without wiggling during these movements.



FIG. 8.

Let the patient practice walking in these positions, both on the flat foot and tip-toe, and also step high as if walking up-stairs. With the palm of the patient's hand on the convex side against the ribs, pushing them in, the hand on the

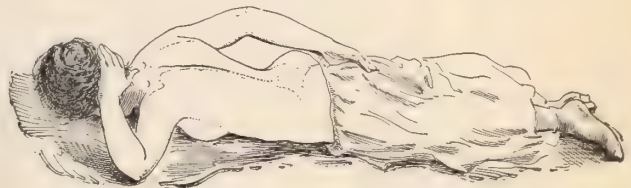


FIG. 9.

concave side, she pushes a slight weight up in the air, while the body swings so as to straighten out the curves.



FIG. 10.

Sit behind the patient, fix her thighs with your knees, while she holds both arms above the head and bows toward the floor, keeping her knees stiff while you keep her ribs as straight as possible with your hands.

With the arm on the concave side across the top of the

head, and the arm on the convex side around in front of the abdomen, the patient bends to the convex side through the ribs and *not* through the waist. (See Fig. 13.)



FIG. 11.

The patient sitting with the back toward the surgeon, the latter pushes one hand against the most projecting part of the convexity, and, with the other hand passed under the shoulder of the concave side, straightens out the curve as much as possible, the hand on the "bulge" acting as a fulcrum in straightening the curve.

The patient sits on a stool in front of the surgeon, who fixes the pelvis with his knees. The patient then twists the projecting shoulder to the front while the surgeon holds



FIG. 12.

the elbows, which are at right angles to the trunk, the hands being behind the head, and makes resistance. In the same position the patient swings forward and back, swinging through the hips, keeping the back stiff, and not bending in the waist.



FIG. 13.

The patient pushes in the ribs on the convex side with the hand, and pushes up with the hand on the concave side, the same as when standing. She also lifts the arm on the concave side up at right angles with the body while holding a weight.

In cases of round shoulders, windmill motions of both arms and to-and-fro movements of the head against resistance are advisable.

The patient lies prone on the couch, all the body above the waist projecting from it, while the surgeon holds the heels. With the hands behind

the head, the elbows thrown back, the body is bent toward the floor, then raised up; later on, resistance is made by the surgeon. The patient lies on the concave side and rises up laterally. The patient lies with the convexity on the edge of the couch, and hangs off as far and as long as possible.

One of the best exercises for removing the curve is for the patient to place the head in a collar attached to a cross-bar above the head suspended from the ceiling by a compound pulley and rope. The patient now grasps the rope as high up as possible, and pulls up hand over hand until the toes just touch the floor. (See Figs. 1 and 2.) While hanging thus she takes three deep, full, slow inspirations and expirations. While she is hanging thus the surgeon corrects the rotation by pushing the ribs with one hand while he steadies the pelvis with the other.

Another good thing is for the patient to have a belt passing around the pelvis, with a handle at each side. Holding these in the hands, she straightens the arms out, and the spinal column is thus stretched and straightened much in the same way as by self-suspension.

The patient stands bent forward as if playing leap-frog, her hands on a chair, while the surgeon, with one hand under the shoulder on the convex side and one hand on the projecting ribs, corrects the rotation. It is advisable to steady the patient with the knee while doing this.

There are some other movements I might mention did time permit, and some exercises with weights and pulleys that are beneficial, but those I have illustrated I consider the most important, and, as each individual case must be a separate study by itself, the exercises must be adapted to meet its peculiar requirements. Above all, the co-operation of the patients must be secured, and I have found it useful to let them look at their backs by means of two large looking-glasses, and thus know when they are standing straight and when they are crooked, for they often are so habituated to an improper mode of carriage that when put straight they feel as if they were crooked, but by means of training with the looking-glasses they can be made to associate the feelings caused by the straight position with the fact that they are straight as seen in the glass, and so during the day retain themselves straight by putting themselves into the position which produces these same feelings.

The patients should have chairs of such height that the feet are on the ground while the thighs are on the seat, and with a back that will support the lumbar spine without inducing them to loll about, and I also direct them to lie down straight whenever they are too tired to sit up properly.

At night I have recently tried making extension by a weight and pulley attached to the head by the chin-piece of the suspension apparatus, while counter-extension is made by a similar weight and pulley attached to a pelvis-belt. The cord attached to the pelvis-belt should go both to the front and back of the latter, as, if fastened to the back only, it causes the front part of the belt to cut into the abdomen. I have not tried this method long enough to speak of its merits, but think it will prove beneficial.

SURGERY OF THE BRAIN,

BASED ON THE PRINCIPLES OF CEREBRAL LOCALIZATION.

BY ROSWELL PARK, A. M., M. D.,

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(Concluded from page 519.)

THE table includes every case which I have been able to find where the exploration or the complete operation was practiced on account of lesions previously diagnosed, according to the principles of cerebral localization and without reference to scars or surface markings, although probably the corroborative evidence which they might afford could not be disregarded. In this table are included three of my own cases, never before reported, the first of which antedates Mr. Horsley's first case, according to his published table of personal cases, by three months. It has been difficult to decide, in a few instances, whether a given case was entitled to a place in this collection or not. This I have had to determine on perhaps insufficient data, and accordingly desire to express a hope that I have not been guilty of any injustice in either direction.

My summary of cases and table include sixty-three cases. Certain data deduced from these will be of interest. The deaths were seventeen in number, of which only *five* can be justly laid to the operation itself. Fifteen of these cases were abscesses, subdural or subcortical. In eleven the lesion was a tumor, exclusive of tuberculous nodules. Of cysts, properly speaking, there were twelve. The twenty-five other cases were of a miscellaneous nature. In three cases the true nature of the lesion was not revealed during the operation and was only discovered at the autopsy. In two cases in which no palpable or visible lesion was discovered at the time of operating, the symptoms which led to its performance were nevertheless relieved, though nothing but careful exploration was practiced.

Of the 63 operations, 17 have been done by American surgeons. Those who have themselves operated more than once are, with the number of their operations, Macewen, 12; Horsley, 11; Bergmann, 4; Keen, 3; Weir, 3; and Park, 3.

CASES.

1. MACEWEN, 1879.—Boy who had had a fall six days previously from which he apparently recovered; six days later convulsions; paresis of left arm and leg; phenomena indicating lesion of lower part of fissure of Rolando. That portion was excised; the dura was found bulging; two ounces of fluid, coagulated blood removed; patient rapidly recovered.—“Med. News,” Aug. 18, 1888; “Brit. Med. Jour.,” Aug., 1888, p. 303.

2. STIMSON.—Male, twenty-six years, hit on the right side of the head with a stone. No fracture found, but a scalp wound. In the fifth week hebetude and headache. In the eleventh week was seen to have wrist-drop on the left side. Operation, July 20, 1880. No anæsthetic, only slightly sensitive to pain. Trephined above upper end of scar, at a point about back of the middle of the post-central gyrus. Two ounces of pus drawn from an abscess at opening but a quarter of an inch below the surface. A probe was passed two inches. The patient died nine hours after operation. On autopsy, there was found a collapsed cavity at a point “in the parietal lobe behind the lower part of the ascending parietal convolution, from which it was

separated by a shallow sulcus.”—“Archives of Medicine,” 1887, v, p. 218.

3. MACEWEN, 1881.—Large cerebral abscess in temporo-sphenoidal lobe. Patient aphasic. Sudden signs of abscess having burst into lateral ventricle. Operation while patient was *in extremis*. Abscess reached at a depth of a quarter of an inch, and several ounces evacuated. Autopsy proved it to be an old encysted abscess.—“Brit. Med. Jour.,” Aug. 11, 1888, p. 304.

4. MACEWEN, 1883.—Case of brachial monoplegia. Operation. Lesion in white substance of motor cortex of middle of ascending frontal convolution, found to be an old extravasation of blood, around which encephalitis had occurred, inducing irritation and compression.—“Brit. Med. Jour.,” Aug. 11, 1888, p. 304.

5. MACEWEN.—Boy aged three. Brachio-cranial monoplegia with rigidity, resulting from injury eight months previously. Operation (no date given). Large, thick-walled, subdural cyst found, and a spiculum of bone pressing on the brain. Almost complete recovery.—“Brit. Med. Jour.,” Aug. 11, 1888, p. 306.

6. MACEWEN.—Patient with ptosis, mydriasis, paresis of ocular muscles of left side and right facial paralysis, and paresis of right arm. Diagnosis of abscess in temporo-sphenoidal lobe. Operation (date not given). Evacuation of three ounces of pus. Rapid recovery.—“Brit. Med. Jour.,” Aug. 11, 1888, p. 307.

7. WERNICKE and HAHN.—Male, aged forty-eight. Hemiplegia, paralysis of right leg, paresis of right arm, speech unaffected. Operation, August, 1881. Trephining over occipital bone; considerable deep resistance; deep exploration; pus found at depth of four centimetres. Death six days later. Tuberculous abscess found in left temporo-occipital lobe perforating into the ventricle.—Seydel, “Antiseptic und Trepanation,” p. 142.

8. POLAILLON.—Male, aged fifteen years. Blow on skull seven months and a half previously; aphasia and paralysis of right arm and leg. Diagnosis of blood-clot over affected centers. Operation, 1882. Trephining over left motor area; clot found in upper part of fissure of Rolando; death in six days. Autopsy showed two abscesses in brain beneath the cortex.—Seydel, *loc. cit.*, p. 137.

9. MACEWEN, 1883.—Male, thirty-five years of age. Had gonorrhœa for three months, followed by bleeding from the ear. Unconscious for twelve hours. Complained of loss of strength in left arm and leg; later right facial paralysis. Diagnosis of meningitis from hæmorrhage and brain lesion of the middle portion of the right gyrus centralis anterior. Trephining over right temporal bone. Dura when exposed unevenly red; after incision there was an escape of clear fluid. Along the ascending frontal convolution there was a yellow opaque membranous mass which reached into the fissure of Rolando, which was extirpated and the button of bone replaced. Wound healed in eight days, and in six weeks recovery was complete. Macewen's diagnosis was tuberculosis. Bergmann considers it to have been a gumma.—“Lancet,” 1885, p. 881. *Vide also* Bergmann, *loc. cit.*

10. MACEWEN, 1883.—Female, aged twenty-five. Syphilitic history; paralysis of left side, of gradual onset, with prickling sensations. Removal of a square inch of right parietal bone. Surface of brain covered with opaque yellow mass over the middle and upper thirds of the ascending frontal convolution and the sulcus frontalis. After incision, in the upper anterior part of the gyrus anterior, where the brain matter seemed more resistant, some brown, cloudy fluid escaped. Reimplantation of bone and rapid healing. At the end of the first week there was movement in fingers and toes; after eight weeks good mo-

tility and complete recovery. After two years, condition good.—“*Lancet*,” 1885, p. 934.

11. **MAEWEEN**, 1879.—Patient with mental symptoms and convulsions limited to right side, commencing in face and arm and later involving the leg. Diagnosis of lesion involving lower and middle portion of the ascending frontal convolution. Application of trephine. Tumor of the dura mater removed, along with the membranes so far as they were involved; rapid recovery.—“*Med. News*,” Aug. 18, 1888, p. 170; “*Brit. Med. Jour.*,” Aug. 11, 1888.

12. **MAEWEEN**.—Male, twenty-two years old. Epileptiform convulsions, appearing on an average every five minutes, limited to the tongue, right facial muscles, and platysma on the same side. Eight years previously had received an injury to the head, after which right arm became weak. Diagnosis of lesion of ascending frontal convolution. Operation; cyst found in ascending frontal convolution, size of a filbert, surrounded by inflammatory zone. Extirpation of entire lesion; rapid recovery and return of motor power.—“*Med. News*,” Aug. 18, 1888.

13. **MAEWEEN**.—Girl, seven years of age, with frequently recurring epileptiform seizures. The first sensation was experienced in great toe of right foot, which was soon extended in clonic spasm, and sometimes was followed by contractions of entire limb, with motor paralysis in affected parts. Diagnosis of lesion, probably multiple, in upper region of ascending frontal convolution, thought to be possibly tubercular. Exposure of this region. A few tubercular nodules were discovered on the surface. On careful palpation, discovery of a circumscribed nodule in the cerebral substance. On incision, this was found to be a tubercular mass, size of a hazel-nut, which was easily shelled out. Rapid recovery without disturbance.—“*Med. News*,” Aug. 18, 1888.

14. **MAEWEEN**, 1883.—Adult male. Injury a year previous, followed by melancholy and intense headache. Behind the angular process of the frontal bone was a slight osseous depression which could not account for his symptoms. No motor phenomena, but discovery of psychical blindness. Physically he could see, but there was conveyed no mental impression. Diagnosis of lesion in the angular gyrus. On exposure of the part, a detachment of internal table was found, which had caused pressure on the part beneath. The depressed bone was removed and reimplanted in proper position. Rapid healing and wonderful benefit to his general condition.—“*Med. News*,” Aug. 18, 1888.

15. **LEO**.—Male, aged twenty-five. Struck on the back of the head with a brick when thirteen years old. First fit at nineteen while sitting at work. “Felt himself swelling immensely; all his surroundings seemed to become grossly enlarged; he uttered a sharp cry.” He had a convulsion, and after it remained comatose for a time. Before the fit he uttered a prolonged cry, and his head turned to the right and backward. The fit was limited to the right side of neck and right arm, and of short duration. Recovered with a start of surprise. At last could not repeat words distinctly except monosyllables, and could swallow but very little. Operation, August 11, 1882. Disc of bone an inch in diameter was removed from right side, an inch and a half above and behind the mastoid process, over squamous ridge of temporal bone. The patient recovered.—“*Am. Jour. of Neurol. and Psychiatry*,” vol. ii, 1883, p. 38.

16. **DURANTE**.—Fibro-sarcoma extending across middle line from the left anterior cranial cavity; destroying lamina cribrosa; pressing superior orbital plate downward; extending posteriorly nearly to sella turcica; with extensive atrophy of left frontal lobe. Operation, May, 1884. Incision from left internal canthus upward and outward toward temporal region; large

piece of cranium removed, by hammer and chisel, downward as far as superior border of orbit. Tumor removed without much hæmorrhage; drainage made by tube into the nose; wound closed; tampon of gauze around drainage-tube for ten days. Patient discharged cured. Previous symptom: protrusion of the left eye, anosmia, weakness of memory, uncertainty of motion, tendency to depression and silence. Three months after operation, mental depression and disturbances of memory had disappeared.—“*Transactions of the Ninth International Medical Congress*,” vol. i, p. 570.

17. **BENNETT and GODLEE**.—Male, twenty-five years of age. Headache for four years; violent attacks of emesis and suffocation; intelligence and special senses not affected; double optic neuritis; paralysis of left hand and fingers; loss of rotation of forearm; limitation of motion of left shoulder; slight paresis of left leg and left side of face. Operation, November 25, 1884. An opening two inches by an inch and three quarters was made on the right side over upper third of fissure of Rolando. Enucleation of a tumor the size of a walnut; bleeding checked with galvano-cautery; cavity drained. Tumor found to be glioma. Good result for four days, then suppuration and œdema of face and scalp. A little later hernia cerebri, suppurative basilar meningitis, etc. Death four weeks after operation.—“*Lancet*,” 1884, vol. ii, p. 1090, and 1885, vol. i, p. 13.

18. **MILLS**.—Male, aged forty years. In 1873 had an injury to the skull with supposed fracture, followed by violent reaction, the convulsions increasing in severity and number during the ensuing eight years. All this time he suffered from headache, which was sometimes intense. Three years after the injury his eyesight began to fail and was almost lost. Just before entering the hospital paresis of the right arm and leg supervened. In the hospital he suffered from convulsions with spasms of the right arm and leg, alternating with rigidity; eyes fixed, deviating to the right; pupils dilated, and between convulsions oscillating horizontally. During the night convulsions followed at intervals of fifteen minutes; toward morning he became comatose, and when seen by Dr. Mills was in this condition. Dr. Mills and Dr. Hearn decided to trephine on the left side, about the Rolandic line, concluding that the convulsions were due to involvement of the dura. Operation, without anæsthetic, 1884. Dura found adherent to overlying bone; no depression nor fracture of internal table apparent. Soon after the operation he became quieted, the convulsions were less marked, and he was again able to swallow and take nourishment. The following day he recognized his mother and spoke intelligently. During the eighty hours after the operation he had a few mild convulsions, and at the expiration of this time died quietly. On autopsy, there were found on the left side, at the site of the operation and in its neighborhood, firm adhesions of the dura to the pia and brain substance. The tissues as a whole formed a common mass; the dura was also adherent to the skull; the membranes showed necrobiotic spots, and the cause of death was shown to be a pachymeningitis.—Reported by Roberts, “*Annals of Surgery*,” vol. ii, p. 112, 1885.

19. **GUSSENBAUER**, 1884.—An eighteen-year-old scholar sustained a perforating gunshot wound of the right side of the forehead. The contused and lacerated wound healed after suppuration, and was followed by necrosis of the superficial part of the bone. Later symptoms of compression of the brain appeared, with certain local and motor symptoms, from which Gussenbauer diagnosed abscess of the brain and trephined at the injured spot. After exposure of the brain he detected a deep fluctuation, made a deep incision, and evacuated a deep abscess. Complete recovery followed, complicated only by a tendency to epileptic spasms, which required subsequent medicinal treatment.—“*Prag. med. Wehschft.*,” 1885, Nos. 1 to 3.

20. TRUCKENBROD.—Male, aged twenty-eight. Left otorrhoea. Pain on top of head and occiput; vertigo; fever. Several ear and mastoid operations. Paresis of right side of face. Stuttered while reading and used wrong words. Did not remember the number of his children, his own age or name. Aphasia marked. Oedema behind and above ear. On January 31, 1885, opened skull above the ear and removed a cupful of pus from under dura; abscess as big as a small orange. Bright and well next day. Steady recovery, which resulted in complete cure for four months.—“Archiv. of Otol.,” 1886, xv, pp. 176-185.

21. HIRSCHFELDER and MORSE.—Male, thirty-seven years old. Headache, epileptoid attacks, vertigo, amaurosis, motor and sensor paralysis of left arm, contractures of arm and left side of face. Operation, February 15, 1886. Three trephine openings, making one opening of three inches in diameter, in right parietal bone over fissure of Rolando. Tumor found to be diffuse and very soft, of which only a part two centimetres and a half in size could be removed. Tumor found to be glioma. After the eighth day, until death, a profuse flow of sanious bloody pus with gliomatous elements. No autopsy.—“Pacific Med. and Surg. Jour.,” April, 1886, p. 210.

22. R. PARK.—Girl, aged fourteen. In August, 1881, fell from window, contusing right side of the head. Total unconsciousness for ten days, followed by left hemiplegia, which gradually disappeared. Two years later had her first fit; convulsive seizures beginning in right arm, involving first the right side of the body. Depression of bone an inch and a half above left ear. Diagnosis of cystic degeneration of blood-clot in the neighborhood of center for right arm. Operation, February 24, 1886. Bony defect two centimetres and a half in diameter. This was found filled in with fibrous membrane, over which the periosteum was adherent; underneath this a cyst. Large opening made with trephine and bone forceps and a cystic cavity three centimetres and a half in diameter uncovered. Excision of overlying dura and removal of cyst. Immediate union of wound, great improvement, though she still has epileptoid seizures when her digestive organs are deranged. Reported for first time.

23. HORSLEY.—Male, aged twenty-two. Scar in brain from old depressed fracture of skull. Fits beginning in the right leg. Twenty-eight hundred and seventy fits during the first thirteen days of his stay in the hospital. Complete paralysis of right arm and leg. Diagnosis of lesion involving the end of the superior frontal sulcus. Operation, May 25, 1886. Free incision and excision of lesion, which was found to be cicatricial; primary union; no drainage after second day. General improvement, paralysis unchanged, but has had no fits since operation.

24. HORSLEY.—Male, twenty years of age. Repeated attacks of pleurisy. Since the 15th of January, 1884, began to suffer from clonic cramps in left thumb and index finger, first severe attack being in March, when he fell to the ground. During 1885 no pronounced epileptic attacks. Seizures began in the fingers of his left hand, extending up the arm. In April, 1886, had practically lost power of his left arm, with severe pain from occipital to right parietal region. Diagnosis: Lesion of uncertain nature in ascending central convolution at center for finger. Operation, June 22, 1886. After exposing brain there appeared a large tumor. This was superficial and seemed half an inch wide. Excision of this with a surrounding zone of healthy tissue. It was found to extend somewhat deeply into the cortex. Tumor found to be tuberculous, composed of two caseous masses. Nearly all the wound healed immediately. On the day following the operation, paralysis of left arm; later, all motility was recovered save that in the index finger.

25. BERGMANN.—Male, aged nineteen. Bullet wound of

right temple; unconsciousness. Wound healed in three weeks without pus. Three months later sudden loss of consciousness, occipital pain, spasms of several muscles; subsequently atrophy of optic disc on right side, local temperature elevated, and paralysis of left side of face. Diagnosis of abscess near lower third of right fissure of Rolando. Operation, June, 1886. Three openings made, no pus found, wound packed with iodoform gauze; three days later spontaneous rupture of an abscess and evacuation of a large quantity of pus. Condition much improved; two days later second small abscess emptied in the same way. Patient eventually died. On autopsy, a third abscess was discovered.—“Wiener med. Presse,” Nov. 27, 1886.

26. HORSLEY.—Man, aged twenty-four. Old punctured fracture of skull involving cortex in motor area, causing severe epileptiform seizures in groups every three weeks. Slight paralysis of right arm and face; dull headache. Operation, July 13, 1886. Trephining at seat of external scar; removal of small piece of inner table, which was depressed into a traumatic cyst; surrounding brain substance also removed. Primary union, general improvement, only three fits since operation.

27. HULKE.—Female, fifty-five years of age. Long subject to discharge from right ear; mouth drawn to left; intense pain in right ear and right side of head; stiffness of nape of neck. These symptoms for four days, then drowsiness deepening into coma. Diagnosis of abscess in cerebellum. Operation, April 14, 1886. Immediate effects striking, breathing easier, cyanosis of face relieved; coma less deep, but consciousness never returned, death following morning.—“Lancet,” July 3, 1886, p. 5.

28. BENNETT and GOULD.—Male, aged thirty-six. Blow on right side of the head six years before. Six weeks later had fits limited to left side; continued since at intervals of about one week. Fit followed by violent mania lasting several hours or even days; he was dangerous then. He became suddenly senseless and had general convulsions, most marked on left side. Fits lasted from five to ten minutes. He saw a red light just before the fit came on. Operation, July 8, 1886. Trephined at site of cicatrix from old injury due to fall. This was three inches and a half from the median line, and two inches and three quarters back of the meatus. Bone and piece of dura were removed (both normal); brain explored and nothing found. Wound closed. Uninterrupted recovery, and five months after operation had not had a fit. Bennett located the trouble and site of operation at the angular gyrus.—“Brit. Med. Jour.,” 1887, vol. i, p. 12.

29. HORSLEY.—Male, aged thirty-eight. Left side paralyzed, with epileptiform seizures beginning in the left shoulder; in a semi-comatose condition for ten days previous to operation. Operation, September 23, 1886. A firm glioma weighing four ounces and a half found in the center for left arm; excision along with surrounding zone of brain tissue. Drainage till second day. Wound nearly all healed by immediate union. On eighth day aspiration of a little serous fluid for relief of pressure. Sensation returned and was complete, with consciousness, for two months and a half, when rapid return of growth took place. Patient died in March, 1887.

30. HORSLEY.—Boy, aged ten. Irritative lesion causing epileptic seizures beginning at left angle of mouth. Three to six fits every day—a moral imbecile. Incomplete paralysis of face, volition, and speech. Operation, October 19, 1886. Exposure of facial center, removal of cortex composing the two centers, determined at the time by faradaic battery. Primary union; general improvement in all respects.

31. HORSLEY.—Male, aged thirty-seven. Blow on head fourteen years previously; first fit three years later; dull, bad memory; paresis of right arm and leg; epileptic attacks. Diagnosis of cicatricial lesion in and behind center for movement of

hallux at upper end of Rolandic fissure. Operation, November 8, 1886. Large cystic cicatrix at point diagnosticated. Excision of dural cyst was incomplete owing to collapse of the patient. Improvement of motor power of the upper limb only, and of sensory power in both; mental condition much improved; a few seizures during first week after operation, then only a slight attack once a week.

32. R. PARK.—Male, aged forty-seven. August, 1885, thrown from a wagon; totally unconscious for sixteen hours; slight paresis of right leg; paralysis of right arm, nearly complete aphasia. First epileptic attack four months after injury. Of late these occur very frequently. No scar or depression. Diagnosis: cystic degeneration of blood-clot involving centers for right arm and speech. Operation, November 17, 1886. After trephining, dura bulged into the wound; fluid felt underneath; bone cut away with surgical engine. A cystic tumor found, containing an ounce and a half of clear fluid, about five centimetres in length by two in the other directions. This was freely opened, its interior scraped, its margins sewed to those of the dura, and the whole cavity drained. Wound healed immediately without disturbance. Result has been but partial improvement; no marked improvement in speech. Reported for first time.

33. HORSLEY.—Man, aged thirty-seven. Severe and intractable headache of three years' standing, incapacitating him for work. Operation, November 12, 1886. Trephining at seat of pain, removal of part of parietal bone, whose inner table had been perforated and was being eroded by a Pacchionian body. Rapid recovery with relief of pain.

34. MAY.—Male, aged seven. Severe and persistent headache, chiefly frontal, with vomiting; conjugate deviation of the eyes to the left, and paralysis of right external rectus muscle. Nearly blind from bilateral neuro-retinitis. Staggering gait, especially backward, and sometimes to the left; unable to stand. Retraction of the head, absolute blindness, and nystagmus. No knee-jerk on right side. Much emaciation. Operation, October 8, 1886 (or after, not stated). Occipital bone trephined on right side under superior curved line, midway between it and the foramen magnum. Dura bulged very much. Dug out cerebellum with small spoon-handle, and hard tuberculous tumor size of pigeon's egg; trifling hæmorrhage. Death in a few hours. No autopsy permitted.—"Lancet," April, 1887, vol. i, p. 768.

35. HEATH.—Male, aged twenty. Intemperate. A fall when six years of age, and in December, 1886, another fall on the right temple, from which the next day he lost sight in the right eye. First epileptic attack about Christmas, 1883. Constant headache. Not very intelligent. Right optic atrophy and commencing left. Right anosmia. Left face, arm, and leg paretic. No anæsthesia. Head, arm, and shoulder of left side convulsed during fits. Spot tender on percussion about an inch and a half behind external angular process of frontal bone and two inches from zygoma. Operation, October 13, 1886. Trephined over tender spot and bone removed further forward with forceps. A deeply seated tumor found fixed to the base of the anterior fossa. Operation abandoned. Thirteen months after operation the patient was in fair condition, but troubled with headaches and epileptic attacks returning with greater frequency.—"Lancet," April 7, 1888, i, p. 67.

36. HORSLEY.—Boy, aged four years. Almost complete paralysis in his right arm and leg; semi-comatose; having three to fourteen fits a day. Diagnosis: probable hæmorrhagic cyst beneath the motor cortex. Operation, November 29, 1886. Trephining over left motor area; exploration of brain by incision; nothing found; no harm done. Rapid recovery without drainage; no fit for a month; then six slight ones, and none since.

37. HORSLEY.—Male, aged thirty-seven. Headache; gradual onset of paralysis of right arm and hand, and paresis of right leg; epileptiform attacks beginning at the fingers, which had ceased three months before operation. Operation, December 7, 1886. Removal of tumor weighing four ounces and a half. Immediate union of nearly all the wound; eventual recovery.

38. BERGMANN.—Male, aged sixty-six. External tumor on temporal bone, of twenty years' standing, which suddenly, in the spring of 1886, began to soften, after which began symptoms of aphasia and trouble in right arm. By December, 1886, right arm nearly completely paralyzed. Operation, December 10, 1886. Removal of tumor by chiseling away its margin; bone found perforated; brain invaded by tumor of the size of a small apple. It was necessary to remove a layer of brain-tissue in order to be sure of complete extirpation; ligature of several branches of the middle meningeal; extirpation of a considerable portion of the superior longitudinal sinus; hæmorrhage free but controllable. Tumor sarcomatous. Death on fifth day from intense œdema of the brain.—"Archiv für klin. Chir.," vol. xxxvi, p. 831.

39. HORSLEY.—Male, eighteen years of age. Increasing headache; vomiting; optic neuritis; diminishing muscular power of all limbs, especially of left arm and leg; affection of the sphincters; epileptic seizures, with turning of head to right; consciousness good; had been in bed one year. Operation, December 17, 1886. Trephining over right hemisphere of cerebellum; removal of a tuberculous mass weighing seven drachms. Death nineteen hours after. Autopsy revealed disseminated tuberculosis.

NOTE.—Horsley's cases, given above, were reported in his brochure on "Brain Surgery," from "Brit. Med. Jour.," Oct. 9, 1886, and April 23, 1887.

40. MARKOE. Reported at a meeting of the New York Surgical Society, October 26, 1887.—Man, aged twenty-five. In 1879 he fell eight feet, striking on his head; unconscious for some time. Brain fever followed, and two months after the accident he had his first convulsion. Convulsions recurred at irregular intervals for two years, then became less frequent, and ceased for two years. In January, 1887, while bathing, he struck his head, and within a week had another convulsion, which was subsequently frequently repeated. On examination, his head was irregular in shape, the right parietal region protruding, the left parietal region markedly depressed. In the center of the left parietal region was a marked depression, and all pain was referred to this spot. His convulsions were not preceded by aura, nor did muscular spasm begin at any single point. The fits increased in frequency and severity, and were followed by great excitement. Operation, January 27, 1887. Large trephine applied over the depressed area. On exposure, the dura did not bulge, but fluctuated, and between the dura and the brain a firm, hard substance was felt. On reflecting the dura, a cyst was found underneath containing a drachm of fluid, and presenting two firm masses lying close together, about an inch in diameter. These were turned out of their bed, and the cortex found to be exposed beneath them. The dura was closed, and the wound dressed in the usual way with catgut drainage. Operation followed by some mental excitement, with amnesic aphasia for several days, and with some paresis in his right arm. Wound healed kindly. Discharged well on February 19th. Since this time he has so remained. The masses thus removed were of anomalous construction; they were decided by Dr. Prudden to be developed growths of aberrant brain-tissue.

41. BERGMANN.—Male, aged twenty years. When four years of age fractured his skull by injury to left side of head. Soon after, paresis of right side appeared. Two years later, attacks of vertigo; later still, cramps; loss of consciousness; epileptic

spasms; gradual failure of mental and physical powers. At the time of operation he was confined to bed. There was atrophy of the right arm and leg; the arm and fingers were constantly extended; and he had at least two fits a day, beginning invariably in the right fingers. Scar on left side was over center for the right hand. Operation, February 2, 1887. Adhesion of dura and arachnoid to fragment of bone found between the dura and calvarium; removal of same with excision of dura over affected area; cortex beneath excavated and filled with a cystic mass; excision of all this. Wound tamponed with iodoform gauze; secondary suture forty-eight hours later. Recovery. Intensity of tetanic cramps relieved for a time only; no improvement in intelligence.—“*Archiv f. klin. Chir.*,” vol. xxxvi, p. 860.

42. GREENFIELD and CAIRD.—Patient with diagnosis of abscess in anterior part of left temporo-sphenoidal lobe. Operation; evacuation of two ounces of fetid pus. Wound completely healed in eighteen days. Recovery complete.—Ed. note, “*Brit. Med. Jour.*,” 1887, Feb. 5, p. 94.

43. BARKER.—Male, aged thirty-three. Previous trouble in right middle ear, and epileptic attacks when young. In 1886, weakness and coldness in right leg; subsequently, severe headache; tenderness over mastoid and right occipital regions. January 23, 1887, two epileptic spasms within an hour; right side of body convulsed; subsequently, unsteady gait, staggering to the left, and contraction of right pupil. January 25th, mastoid trephined in usual way; no pus found. Later, became semi-comatose, with paresis of left arm, and right pupil dilated. Diagnosis: suppuration over or in arm and face centers of right side. February 3, 1887, operation. Trephine applied over fissure of Rolando; dura bulging; serum found at depth of an inch and a quarter; when an inch and a quarter behind external meatus, pus found at considerable depth, and nearly half an ounce removed; abscess cavity drained by rubber tube, after which as much more pus escaped. Serious collapse of patient; reaction finally established. Patient soon convalesced, made nearly complete recovery.—“*Brit. Med. Jour.*,” April 14, 1888, p. 777.

44. BIRDSALL and WEIR.—Male, aged forty-two. Paretic symptoms in limbs of right side, with diplopia, nausea, headache, etc.; later, hemianopsia and neuro-retinitis. Diagnosis of tumor in cuneus. This diagnosis was fortified by further observation, and symptoms of inco-ordination explained by its pressure on the cerebellum. Operation, March 9, 1887, by Dr. Weir. On opening skull, dura did not pulsate, but was of dark color; incision; appearance of tumor of reddish color, covered with vascular connective tissue; enucleation of same after its incision, and removal in two parts; hæmorrhage troublesome. Tumor found to be spindle-celled sarcoma; greatest circumference, eight inches and a half; weight, 140 grammes. Five hours later, patient in collapse from secondary hæmorrhage; infusion of salt solution; bleeding continued. Death nine hours after operation.—“*Med. News*,” April 16, 1887, p. 423.

45. G. HAMMOND.—Woman, aged thirty-two. First sign of trouble two years and a half previous. Began with loss of consciousness, left-side convulsions, paralysis of left side of face, left hand, arm, then left leg; no sensory disturbance. Operation, March 30, 1887, by Roberts. Opening, exploratory puncture, and incision of brain; nothing found; dura wound closed by suture. She remained unconscious, and died in twenty-four hours. Autopsy showed three cysts deep in brain-substance; their fluid was serous, containing broken-down brain-substance. They were close together, and in position to affect the face and arm and leg centers.—“*Med. News*,” April 23, 1887, p. 472.

46. R. PARK.—Male, aged twenty. In 1885 stabbed with knife at middle of left parietal eminence. Paresis of right arm

followed for a few weeks. Recovery of the wound with suppuration. Six months later, first epileptic attack. Of late, fits at frequent intervals, aura beginning with spasms in left side of face and left angle of mouth; depressed scar nearly over the right arm center, not low enough for that of speech. Diagnosis of hæmorrhagic cyst, involving centers for arm and hand and face. Operation, March 31, 1887. Rectangular piece of bone removed with chisel; depression of inner table; dura adherent to bone above and beneath; cortex bound to the bone by adhesions. These were all loosened and the dura excised. Exploration revealed nothing further. Speedy healing of wound. Four months later was perfectly well and free from fits. Reported for first time.

47. BULLARD and BRADFORD.—Boy, four and a half years old, who was delivered by the forceps, and had over the right parietal bone a scar and a depression supposed to have been caused by them. There had been no convulsions. He presented much diminished intelligence, inability to speak or to use any of his limbs well, with right internal strabismus and right spastic hemiplegia, in addition to the well-marked cicatrix. Operation, June 27, 1887, by Bradford. Trephining on the right side of the head directly over the cicatrix. It was determined that the outer portion of the bone had been fractured and the inner table fissured. The dura, which was thickened and vascular, was incised, but no lesion of the brain beneath was detected. The trephine was then applied over the motor area on the left side, over the junction of the middle and lower thirds of the fissure of Rolando. Here there had been detected a very slight superficial scar in the skull. After the disc of bone had been removed a depression of the brain substance was exposed. This was considered a porencephalic cavity. The patient's condition was so poor after this had been detected that the wound was speedily closed. He died seventeen days after the operation; no autopsy was permitted.—“*Boston Med. and Surg. Jour.*,” 1888, cxviii, p. 162.

48. BIRDSALL, AMIDON, and WEIR.—Female, aged twenty-six. Had had four operations for sarcoma of neck. During the last operation the left brachial plexus was injured and paralysis of left arm followed for two months. Precipitate micturition and defecation; then cramps in left leg and paresis of same; later, cramps and numbness in right hand; for three weeks intense headache. Operation, August 11, 1887, by Weir. Tumor supposed to be in upper portion of Rolandic fissure; large opening made; dura tense and bulging. After incision of dura, brain bulged in wound. Nothing was felt under the finger, no resistance to needle upon pressure. A portion of protruding brain was sliced off, but nothing discovered. Bleeding profuse; checked by thermo-cautery. One week later, hernia cerebri, which developed to the size of a hen's egg. No reaction, but death two months and a half after operation, with signs of lesion in medulla. On autopsy, a tumor was found springing from left lobe of cerebellum; the medulla crowded to right and forward; the tumor extending down spinal canal found to be a spindle-cell sarcoma.—“*Med. News*,” March 5, 1887, p. 273.

49. SUCKLING.—Girl, aged twelve years. Symptoms of two years' duration; vomiting, vertigo, inco-ordination, paresis of left facial muscles, closure of left eye impeded; tongue points toward the right. Diagnosis of tumor in left side of cerebellum, covering left side of pons and left facial and abducent nerves. Operation, summer of 1887. Trephining of occipital bone so as to enter cranial cavity below transverse sinus. Dura exposed and divided transversely; cerebellum seemed soft; removal of considerable of its substance; free hæmorrhage; drainage-tube inserted and wound closed. Patient comatose for twenty hours and died in forty-eight. Autopsy showed de-

generation, probably tubercular, of entire left lobe of cerebellum.—*Brit. Med. Jour.*," Nov. 7, 1886, p. 870.

50. OLIVER.—Boy, aged sixteen, suffering from epilepsy. Nine months previously, concussion of brain; well for ten days; then had his first convulsive shiver, and became unconscious for a time. On recovery, severe headache in right side. From that day several fits daily, disposition altered; pain and tenderness referred to right temporal region; left arm and leg much more convulsed than right. During fits had occasionally choreiform movements of these limbs; stupor after the fits. Patient would lie speechless and deaf. Operation, 1887, by Hume. Opening made beneath the tender area. After incision into dura there was an escape of nearly an ounce of serum. Dural wound drained. During the next twenty-four hours there was a free escape of serum. Patient had a few fits during ensuing days, then rapidly recovered. Was free from fits for six months, then they recurred but were changed in character; were treated as hysterical, and after rest in bed he completely recovered.—*Brit. Med. Jour.*," Feb. 4, 1888.

51. SEGUN and WEIR.—Man, aged thirty-nine. Spasms of right side and neck. In 1886 fell unconscious one day; epileptic attacks preceded by aura in right hand and arm and right side of face. Diagnosis of tumor in left motor area. Operation, November 17, 1887, by Weir. Dura protruded slightly; appeared normal; extensively incised; brain seemed to protrude; yielded deep resistance on palpation. Tumor, size of an almond, discovered at depth of an inch, not encapsulated, apparently infiltrating surrounding brain tissue. It was lifted out with a Volkmann spoon. A small fragment, which had separated in process of loosening, was also separately removed. No hæmorrhage from brain; wound drained and irrigated; discs of bone with several fragments replaced over the dura. Tumor found to be sarcoma, principally of round cells. Patient recovered; several months later was in good general condition; better as regards paresis of face and hands; speech much improved. Five months later, no recurrence of growth.—*Am. Jour. of the Med. Sciences*," July, 1888, p. 225.

52. HORSLEY and FERRIER.—Man, aged forty-seven. Offensive discharge from left ear. When seen was drowsy; had pain over left side of head and back of eyes; photophobia; slight discharge from left ear. Became worse; showed affection of speech; used wrong words. Diagnosis of cerebral abscess in anterior third of temporo-sphenoidal lobe. Operation, December 10, 1887, by Horsley. Five drachms of pus evacuated. Complete recovery.—*Brit. Med. Jour.*," March 10 and 24, 1888.

53. KEEN.—Male, aged twenty-six. Fell from a window when three years old, his head striking on a brick. A superficial wound was made, and no trouble was experienced until he was twenty-three, when epilepsy developed, associated with aphasia and paralysis of the right arm and leg. Later, there was recovery from much of this disturbance. Operation, December 15, 1887. Keen removed a considerable area of bone and uncovered a tumor nearly three inches in length in its long axis. During the operation great trouble was experienced from hæmorrhage, which was checked partly by hot water. Patient did well. For several hours on the third day symptoms of brain pressure were observed, and this was attributed to the presence of a large clot of greater size than the original tumor. This was removed by careful washing, and all went well for ten days; then pressure symptoms were again observed. There was also severe diarrhoea and a temperature of 104.5°. The presence of pus was suspected and the wound reopened. No pus was found, and a certain amount of hernia cerebri supervened. It was inferred that the unfavorable symptoms were largely due to the diarrhoea, and two or three other similar attacks made this still more apparent. The hernia was finally overcome, partly by

skin-grafting. The wound was drained by bichloride gauze for eight weeks. It healed perfectly, but with a concave shape instead of convex, and has since continued to be depressed.—*Med. News*," April 21, 1888, p. 107.

54. HARRISON.—Boy, aged fifteen. Severe pain in head following a blow on right side of same eight days previously. Three days later, convulsions in right side of body, first in arm, then in face, then in leg. When they ceased, paralysis of these parts took place. A cicatrix was observed on left side of head covering an uneven surface of bone. It was then learned that eleven years previously he had received a severe blow on this side, causing compound fracture. During the last twelve months twitchings had been noted in the right arm. Diagnosis: abscess of brain in left motor region of cortex. Operation, December 23, 1887. Scar found to correspond to upper part of left ascending frontal convolution. Its center was made the center of the bone wound. The dura was found adherent to the bone with a ridge of bone pressing abnormally on the brain; more bone was removed for the purpose of removing entire ridge; no bulging of dura mater; wound closed. December 27th, condition not improved. Wound reopened, dura incised, opening made to depth of an inch and a quarter, and pus was found. A free incision was made and four drachms of foetid pus evacuated. Abscess cavity washed out and drained; subsequent complete recovery. Abscess rather than tumor diagnosed because of history of original injury with latent symptoms followed by acute and accelerated by recent blow.—*Brit. Med. Jour.*," April 21, 1888, p. 848.

55. STOKES reported a case of successful trephining for cerebral abscess, and exhibited the patient. The man had been struck with a poker on the left side of the mesial line of the head, and about an inch anterior to the coronal suture. He was admitted to the hospital, several weeks having elapsed from the date of the injury. He soon presented brain symptoms, became convulsed and comatose, and it was determined to trephine. Operation, 1887. A small fracture was found under the scar, the dura bulging into the wound; and an exploring needle was introduced to the depth of an inch and a half, and pus was at last found. The dura mater was then incised and an ounce and a half of pus was evacuated. The patient completely recovered and is now attending to his ordinary work.—*Brit. Med. Jour.*," March 3, 1888.

56. MACFARLAN.—Male, aged forty-five. Injury to parietotemporal region of skull some months before. Hemiplegia almost immediate and persistent. January, 1886, trephining over fissure of Rolando over center for lower extremity. Dura tense and pulsating, incised, and several ounces of clear fluid escaped. Subdural cyst lined with brownish membrane. Sharp fragment of bone projecting into brain removed; cyst cavity scraped out, and counter-opening made for better drainage; bone disc reimplanted. Complete cure.—Senn's "Four Months among the Surgeons of Europe."

57. DRUMMOND.—Patient of unknown age. Headache in left temporal region; optic neuritis; cramps beginning in right eyelid, involving right leg, then left side of face and left arm; finally paralysis of right side and spastic rigidity of left side; motor aphasia. Operation, 1887. Bone removed over facial center; opening made; nothing abnormal discovered. Several days later, delirium and death. Abscess found in posterior part of frontal convolution.—*Lancet*," October, 1887, p. 656.

58. CECIL.—Male, aged fifty-two. Blow on temple, with depression. Two months later, hemiplegia and loss of sphincter control of bladder, with stupor. Operation, 1887. Dura adherent to bone and thickened; underneath adhering to a clot; some of the blood still fluid; no pus. Almost complete recovery.—Congress of Italian Surgeons, 1888.

No.	Operator.	Year.	Nature of case.	Result.	Remarks.
1	Macewen.	1879.	Degenerated clot.	Recovery.	Patient in extremis at time of operation.
2	Stimson.	1880.	Abscess of parietal lobe.	Death after 9 hrs.	
3	Macewen.	1881.	Abscess in temporo-sphenoidal lobe.	Death.	
4	"	1883 (?).	Hæmorrhagic lesion in ascending frontal convolution.	Recovery.	
5	"	(?)	Subdural cyst and depressed fragment of bone.	"	Perforation into ventricle found.
6	"	(?)	Abscess of temporo-sphenoidal lobe.	"	
7	Wernicke and Hahn.	1881.	Abscess in occipital lobe.	Death in 6 days.	
8	Polaillon.	....	Subcortical abscess.	Death in 6 days.	
9	Macewen.	1883.	Tubercular meningeal lesion.	Recovery.	Bergmann considers this to have been gumma.
10	"	"	Inflammatory and cystic degeneration.	"	
11	"	....	Dural tumor over ascending frontal c.	"	
12	"	....	Cyst in ascending frontal c.	"	
13	"		Tuberculosis. Nodule in cortex.	"	Temporary improvement. On autopsy another abscess found.
14	"	....	Depression of inner table over angular gyrus.	"	
15	Leo.	1882.	Depressed bone.	"	
16	Durante.	1884.	Sarcoma of frontal lobe.	"	
17	Bennett and Godlee.	"	Glioma.	Death after 4 wks.	Death 6 months later from return.
18	Mills and Hearn.	"	Meningeal adhesions.	Death 80 hrs. later fr'm pachymeningitis	
19	Gussenbauer.	1884 (?).	Abscess, subcortical.	Recovery.	
20	Truckenbrod.	1885.	Abscess, subdural.	"	
21	Hirschfelder & Morse	1886.	Glioma in motor area.	Death.	Slight improvement in paretic condition.
22	R. Park.	"	Subdural cyst in motor area.	Recovery.	
23	Horsley.	"	Cicatrix near upper end of sup. frontal sulcus.	"	
24	"	"	Tuberculous tumor in motor area.	"	
25	Bergmann.	"	Abscess beneath motor area.	Death.	Relief from epileptic seizures for which operation was made.
26	Horsley.	"	Traumatic cyst and depressed bone.	Recovery.	
27	Hulke.	"	Abscess in cerebellum.	Death in 24 hours.	
28	Bennett and Gould.	"	No internal lesion discovered.	Recovery.	
29	Horsley.	"	Glioma, weighing 4½ ounces.	"	No autopsy.
30	"	"	Irritative lesion in facial center.	"	
31	"	"	Subdural cyst and cicatricial lesion.	"	
32	R. Park.	"	Cyst involving speech- and arm-centers.	"	
33	Horsley.	"	Irritative lesion of dura and bone.	"	Complete relief of symptoms.
34	May.	"	Tuberculous tumor of cerebellum.	Death same day.	
35	Heath.	"	Tumor fixed to base of anterior fossa.	Operation abandoned; recov. from what was done.	
36	Horsley.	"	Cyst suspected; no lesion found.	Recovery.	
37	"	"	Tumor in motor area of 4½ oz. weight.	"	Edema of brain.
38	Bergmann.	"	Sarcoma "size of small apple."	Death on 5th day.	
39	Horsley.	"	Tuberculous mass 7 drachms in weight.	Death.	
40	Markoe.	1887.	Lesion of uncert'n and anomalous nature	Recovery.	
41	Bergmann.	"	Depressed bone and dural cicatricial lesion.	"	No improvement in symptoms.
42	Greenfield and Caird.	"	Abscess in temporo-sphenoidal lobe.	"	
43	Barker.	"	Abscess in temporo-sphenoidal lobe.	"	
44	Birdsall and Weir.	"	Sarcoma of occipital lobe.	Death in 9 hours.	
45	Hammond & Roberts.	"	Deep, subcortical cysts.	Death in 24 hours.	Cysts not found till the autopsy.
46	R. Park.	"	Cicatricial dural lesion of arm-center.	Recovery.	
47	Bullard and Bradford.	"	Dural and porencephalic lesion.	Death on 17th day.	
48	Birdsall, Amidon, and Weir.	"	Sarcoma of left lobe of cerebellum.	Recovery.	
49	Suekling.	"	Degeneration of left lobe of cerebellum.	Death in 48 hours.	Probably tuberculous.
50	Oliver and Hume.	"	Cystic lesion.	Recovery.	
51	Seguin and Weir.	"	Sarcoma in motor area.	Recovery.	
52	Horsley.	"	Abscess in temporo-sphenoidal lobe.	"	
53	Keen.	"	Tumor in motor area, "3 inches long."	"	Recovery retarded by hernia cerebri and other complications.
54	Harrison.	"	Subcortical abscess.	"	
55	Stokes.	1887 (?).	Subcortical abscess.	"	
56	Macewen.	1887 (?).	Subdural cyst, with depressed spicule of bone.	"	
57	Drummond.	1887.	Abscess of frontal c.	Death.	Lesion not discovered till the autopsy.
58	Ceci.	"	Fluidified clot (cyst?).	Recovery.	
59	Filkin.	"	Large and deep cyst, with osteophyte.	"	
60	Keen.	1888.	Dural (cicatricial) lesion, with degenerated cortex and a cyst.	"	
61	"	"	Irritative lesion in hand-center.	"	Recovery retarded by hernia cerebri and other complications.
62	Mills and Steinbach.	"	Depressed bone and cicatricial lesion in dura over motor area.	"	
63	Lloyd and Deaver.	"	Irritative dural and cortical lesion.	"	

59. FILKIN.—Girl, aged seventeen. Fracture of skull when ten months old. Right arm and leg almost completely paralyzed and ill developed. Temperature 2° lower on left side. Operation, January, 1888, over motor area. A large cyst ex-

tending to depth of two inches from surface; also an osteophytic growth extending half an inch below level of surrounding bone. Rapid healing; great improvement in motility.—"Edinburgh Med. Jour.," 1888.

60. KEEN.—Man, twenty-five years old. History of fall eighteen months previously. Depression two inches long on right side of head, over supramarginal and post-Rolandic convolutions; paralysis of left wrist and hand; four epileptic fits. Operation, April 12, 1888. Opening three inches and a quarter by an inch and a half; excision of underlying dura which had attached to its under surface a small fragment of bone. Brain tissue found diseased throughout length of scar, and in posterior end of latter a small cyst. Removal of all diseased brain tissue. Patient out of bed on fifth day. Ergot given instead of morphine, and cocaine applied locally as a hæmostatic with good results. Button of bone removed was sewed to under surface of scalp flap by catgut ligature passed through two apertures made in the bone for that purpose.—“Med. News,” April 21, 1888, p. 438.

61. KEEN.—Man, twenty years of age. Suffered from epilepsy for seven years; cause obscure. Attacks all began in left hand. Diagnosis of lesion in center for left hand toward inferior extremity of post-Rolandic convolution. Operation, May, 1888. Opening made in skull two inches and a quarter by two inches and a half. It was difficult to decide which was the post-Rolandic convolution. By use of faradaic current the hand center was determined to lie in the anterior of the three gyri, and this portion was accordingly excised. Replacement of trephine button with a number of smaller fragments. Wound drained. Temperature never reached 100°. On the eighth day patient was out of the house. Integrity of skull entirely re-established. The left hand has since been paralyzed, but no other paralysis has ensued. Epileptic spasms at first increased in number, but have since diminished in frequency and severity.—“Med. News,” June 15, 1888, p. 672; “Am. Jour. of the Med. Sci.,” Oct., 1888; also personal communication.

62. MILLS and STEINBAUGH.—Male, aged thirty-five. Blow on head twenty-nine years previously; epilepsy ever since; convulsive movements in left leg and arm, less on right side; depression of bone over left Rolandic fissure. Diagnosis of lesion in the brain at this point. Operation, July 18, 1888. Trephining over this area. A cicatrix found in dura; excision of same.

63. LLOYD and DEEVER.—Blow on head at fifteen; unconscious and bedridden for a week. First fit at twenty-one years of age. Fits both nocturnal and diurnal, gradually increasing in frequency. While in the hospital has had as many as twenty-eight in one day. Aura from fore and middle fingers of left hand. Fit begins in forefinger of left hand, involving especially (and sometimes only) muscles of left arm and left face. Left arm and left face (especially) paretic during intervals between fits. Loss of consciousness in these slight seizures little if any. Has occasional greater fits, spreading very generally over body on both sides, but always worse on left side. No aphasia. No ocular symptoms. Little headache. No gastric symptoms. Operation, June 12, 1888, by Deaver. No gross lesion discoverable in bone, membranes, cortex, or subcortex. Motor centers for arm and face mapped out with faradism by Dr. Lloyd and carefully excised. Antiseptics. After operation, slight twitchings occasionally in left hand and face for six days, maniacal delirium, with visual and auditory hallucinations. Recovery. No convulsion since. Paresis of left face and flexor muscles of finger and thumb continues.—Personal communication.

NOTE.—I desire to express here my obligation to Professor Mills for assistance in the collection of these cases, and to Professor Keen and Dr. Deaver for personal accounts of their own cases.

The Hoagland Laboratory.—The first lecture of a course on bacteriology, by the director of the laboratory, Dr. George M. Sternberg, will be given this (Saturday) evening.

A CASE OF RENAL CALCULUS AND HYDRONEPHROSIS; EXPLORATORY LUMBAR INCISION, AND FINAL PASSAGE OF CONCRETION PER URETHRAM.*

BY FRANK W. ROCKWELL, M.D.,

BROOKLYN.

THE following case is presented to the association as a contribution to the history of the operative treatment of renal calculus, more especially as it illustrates in a most marked degree the difficulties and uncertainties which may attend exploratory operations as practiced in the lumbar region, and the search for small calculi in normal or but slightly diseased kidneys. The fact that since the first performance of the lumbar operation by Morris in 1880 over fifty cases have been reported (*vide* Greig Smith's “Abdominal Surgery,” p. 464), and that failure to find the stone has occurred in *over half of them*, goes to prove that, however valuable the procedure may be from a surgical standpoint, the diagnosis upon which its success depends must for the present remain to a high degree obscure and unsatisfactory. That the failures recorded were not always due to inexperience on the operator's part may be inferred from the histories of two of Morris's own cases, in one of which a calculus of the “size of a marble” could not be localized, even after the kidney containing it had been removed and laid upon a hard surface, while unsuccessful cases have been published by Lloyd, Barker, Godlee, and Thornton, the latter having for that reason abandoned the lumbar incision, and suggested in its place the combined operation now known by his name. It is, in fact, in the very class of cases to which the present one belongs—viz., a small calculus in a healthy kidney—that most difficulty is experienced both before and during operation, and herein lies its principal interest.

Early in the fall of 1887 Mr. B., a well-nourished and robust man, forty-one years of age and of perfectly temperate and regular habits, consulted me in regard to a nephralgia from which he was suffering, and gave me the following history: As a boy he had been the subject of frequent and most alarming attacks of hæmaturia, which had finally abruptly terminated in the expulsion of a small uric-acid calculus. Since that time nothing had occurred until within the last few years, when he had again begun to suffer from a return of the hæmaturia, accompanied by sharp pain, which he had always noticed as localized in the right kidney, and accompanied by the usual symptoms—such as retraction of the testicle on the affected side, genito-crural neuralgia, etc. Fragments and detritus had been carefully searched for, but none ever found. An examination of the urine passed at this interview showed a large amount of blood (one-sixth), and renal and bladder epithelium in abundance, also oxalate of lime in scanty, granular masses, but no urates nor uric acid, or evidence of any inflammatory condition of the kidney or its pelvis.

He was put upon a carefully restricted diet, with alkalies internally, and the frequent use of warm baths, the flesh-brush, etc., and for a few weeks seemed to derive some benefit, but by November had again begun to pass large quantities of blood, and to suffer at intervals of about a week with attacks of renal

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

colic so severe as to make the question of their relief imperative. This could only be obtained by the use of such large quantities of opium and chloroform as to make their administration a matter of extreme difficulty, especially as the patient's tolerance of both drugs was excessively bad, and the depression and vomiting following their employment lasted for days after the attack had ceased. On November 5th an unusually severe paroxysm occurred, and was followed by acute retention, necessitating the use of the catheter. While I was withdrawing the urine the patient drew my attention to the fact that a fullness in the right flank, of which he had previously complained but which I had never been able to detect, was again present. On examination, I was able to make out an ill-defined tumor occupying the right loin in the vicinity of the kidney, dull on percussion, and slightly movable in the direction of the abdominal cavity. The next day retention of urine occurred, and the emptying of the bladder by the catheter was followed by rapid subsidence of the swelling. The patient now began to complain of tenderness over the bladder and in the vicinity of the orifice of the right ureter, also of intense pain in the glans penis after micturition. Hoping that the calculus, which from the previous history I believed to be a small one, was perhaps engaged in the ureter, or lying at its vesical orifice, I went with the patient on November 8th to Professor E. L. Keyes to consult as to the immediate and future treatment of the case. The renal tumor, which had three days previously been felt, had now almost disappeared, and Dr. Keyes was uncertain as to whether he could discover any trace of it, but, believing that a calculus was engaged in the urinary passages, advised flushing the whole tract by the free use of lager beer, with the view of dislodging it, and, in the event of the failure of the plan after a few trials, an exploratory nephrotomy, preferably by the abdominal incision, as recommended by Langenbuch.

The first trial of the plan was made on November 12th, and on the following morning the patient was seized with the worst attack he had yet suffered from, requiring for its relief during the twelve hours it lasted fourteen grains of morphine, given by the skin and stomach, and the inhalation of a pound of chloroform, the vapor being administered during the intervals of comparative relief from pain obtained by the opium. On recovery, the patient at once determined to submit to the operation, but concluded to postpone its performance till the latter part of December. During the interval the attacks occurred with varying frequency, and, the patient desiring further counsel, Professor H. B. Sands was consulted, who agreed with Professor Keyes and myself as to the propriety of an exploratory operation, but, as the kidney was probably unaffected, and its examination through a lumbar incision comparatively easy, suggested this plan as preferable to the former and free from its dangers. After a few days' preparation the patient entered St. Mary's Hospital, and on December 29th I did the following operation:

An incision four inches and a half in length and parallel with the last rib exposed the border of the quadratus lumborum, and, its edges being well retracted and the hemorrhage controlled, the deep fascia was divided and the circumrenal fat scratched through sufficiently to afford room for thorough palpation of the kidney. This, however, was found to be a most difficult matter, as the patient was very muscular, and the lower border of the kidney barely perceptible below the edge of the last rib. The wound was therefore enlarged by prolonging its outer angle downward for about three inches, when, on strong retraction of the flap, I was able to identify with the finger the lower two thirds of the kidney, with its pelvis, and to feel the pulsations of the renal artery. The most careful palpation of the organ, even over its anterior surface, failed to show any of the characteristic induration described by Morris,

or to reveal anything in connection with the ureter, the upper portion of which could be traced downward for an inch or two. At one time, when two fingers were used and the pelvis was gently pressed between them, I thought I detected a hard mass near the hilum, but, after withdrawing the hand and cleansing it of blood to insure greater delicacy of touch, I was unable to find it again. A long exploring-needle was now passed into the pelvis and through the kidney in as many directions as possible, but with no result. As the patient was not bearing the anæsthetic well, I was reluctantly obliged to abandon further examination, which I had hoped to make through incisions in the kidney itself, and as nephrectomy—even if deemed advisable—was for the same reason impracticable, I was compelled to content myself with thoroughly irrigating the wound with the mercuric biniodide solution, closing it with silk sutures and dressing it with iodoform gauze, a large rubber drain having been first introduced and the dressing completed by a thick layer of paper wool.

The patient rallied well from the anæsthetic, and expressed himself as very comfortable until early in the evening, when I was hastily summoned to the hospital on account of a sudden hæmorrhage which had occurred. This proved to be from a vessel in the wound itself, as the drainage-tube was unobstructed and the blood welled up by its side, being evidently due to the effect of reaction from the ether on some unsecured vessel. The wound was partially reopened, the vessel secured, and iodoform gauze again packed about the drain, after which no further bleeding occurred. Half a pint of perfectly clear urine was withdrawn from the bladder, and the patient passed a fairly comfortable night. On the third day, as the dressings were very moist and had a faint urinous odor, I removed them, and, the wound being united except where the gauze had been applied, I introduced a few catgut sutures under cocaine anæsthesia, and brought its deep surfaces together, leaving only sufficient room for the drainage-tube. Under this treatment the wound continued to heal, though daily change of dressings was necessitated by the free discharge of fluid.

On the twentieth day (January 18th) this discharge, which had been steadily diminishing, suddenly ceased and symptoms of vesical calculus developed, and for the next six days were present with varying intensity, when on the seventh (January 24th) the wound, which was now a mere fistulous tract, again began to discharge large quantities of *limpid fluid free from all odor*, and so copious as to saturate the patient's bedding in spite of large absorbent dressings repeated every three hours. This continued for two days, when it again suddenly ceased, and the patient began to complain of severe vesical tenesmus and pain. On the morning of the third day (January 27th) he passed an oxalate-of-calcium calculus weighing six grains, and his symptoms disappeared. In another week he was about his room, and the fistula now rapidly closed under naphthaline dressings. On February 17th he left the hospital, and on March 1st went to Florida, though still complaining of an irritable bladder and occasional pain on urination. This, from the appearance of the calculus passed, I felt certain was due to a small fragment still remaining in the bladder, though I was unable to detect it. On the 17th of March he passed a fragment longer than the first and weighing fourteen grains, and from this time improved rapidly, returning home on March 26th, when he reported himself as free from all pain and rapidly improving as to his frequent micturition.

An examination of the right flank at this time revealed an elastic and obscurely fluctuating tumor in the ileo-costal space, flat on percussion, and with an area of resonance between its anterior edge and the normal liver dullness. A catheter was passed but no urine obtained, the patient having emptied the

bladder about half an hour previously; subsequent examination, however, showed the presence of renal epithelial cells and small amounts of pus. The patient volunteered the statement that he could detect marked diminution of the swelling at irregular periods, which corresponded with the passage of large amounts of urine. As the irritability of the bladder remained to a slight degree, he was put upon the use of gradually increasing doses of borax, at the suggestion of Dr. Keyes, and under this treatment slowly improved. On April 18th he presented himself at my office, when I find on my note-book a memorandum to the effect that the tumor in the flank had entirely disappeared, and the normal areas of dullness were found on percussion. The urine, however, remained as at the previous examination. During the summer I have not seen him, but a letter dated September 14th states that under a milk diet he had improved so much that the urine was now almost clear, though the swelling in the flank still troubled him at times. He regards himself as in excellent health, though in all probability a slight pyelitis and hydronephrosis still remain as the results of his past experiences.

The interesting points in regard to this and similar cases are, of course, those pertaining to the choice of operations for their relief, and the methods most likely to succeed in localizing the calculus both before and at the time of operation. If I am right in my belief that I felt the stone for a moment during the operation, I probably helped its progress onward into the ureter by the very manipulations I was practicing, but I am sure that, judging from the difficulty I had in examining the kidney with the finger, I should have been unable to make any incision into the organ at a point higher than its lower third. Whether the increased facility of manipulation gained by Thornton's operation would have warranted the increased risk in a case of this kind seems to my own mind more than doubtful, especially in view of the fact that from the abdominal side the operator would have the same difficulty in examining the posterior surface of the kidney that makes the reverse true of the lumbar incision.

The case adds one more to the list (eleven of which have been collected by Morris) of intermittent hydronephrosis, supposing the diagnosis to be confirmed by its future history.

In the discussion before the Clinical Society of London in 1887 I find a similar case reported by Godlee, in which he operated upon a man on whom an unsuccessful lumbar exploration had been made some time before by Marcus Beck. All attempts to find the calculus proved futile, but in a few days it was voided and rapid recovery ensued.

Correspondence.

LETTER FROM PARIS.

The Diminution of the Birth-rate in France.—The Determining Causes of Sex.—The Respiratory Importance of Nitrogen.—The Medical Students of Paris.—A Case of Double Placenta at a Single Birth.

PARIS, October 24, 1888.

M. LAGNEAU made some interesting statements to the Academy of Medicine lately in regard to the diminution and disappearance of families, from which it appears that most of the

noble families of former days have ceased to exist. In 1846 Laine found only two of the descendants of 314 families that had existed in the twelfth century; and, according to another writer, 380 noble families had had an average duration of only three hundred years. It was the same with ordinary people, as only 11 per cent. of the persons whose names were on a certain election list of the year 1555 had remained in that locality to this day. At about the beginning of this century, in France, there had been an average of four children to a family, and at present there were not more than three. Taking this fact as a guide, M. Lagneau shows that there is a very considerable and rapid diminution in families having but three children. In one hundred families who had an average of three hundred children, in the fifth generation, after one hundred and twenty-four years, more than half of them had had no male descendants. Only forty-nine of the men had married. In the seventh generation, after one hundred and eighty-six years, two thirds of the families had failed to supply descendants, as but thirty-four of the men had married. An allowance was made for the number who became priests and for those who remained bachelors. It may also be stated that it has been found that in France 34 per cent. of all marriages are without issue. Finally, after four hundred and thirty-four years, nine tenths of the one hundred families taken as an example had had no male descendants to hand down the name, and this notwithstanding that there had been a proportion of one hundred and five males to one hundred females born.

Professor (*agrégé*) Charpentier, at a subsequent session of the Academy, made a communication upon the causes that determine sex. He first said that but little was certainly known about the matter up to the present day, but that some few facts seemed to be established almost beyond doubt. One of these was that the absolute or relative age of the parents had a real influence in producing a certain sex in the embryo. For instance, when a man was ten years older than his wife, while she was still in the active period of production, there would be more boys than girls born to them. Another point which seemed to be established was that that one of the couple who had the most energy decided the sex of the child. Furthermore, that if coition was practiced some time after menstruation (at least eight days) a male child would result. Bidder, after examining the records of some twelve thousand births, had come to the following conclusions on this subject: 1. That very young primiparæ might be expected to have mostly boys. 2. That a primipara of middle age would be more apt to have girls. 3. That a primipara after the middle period of life would have more boys. The multiparæ followed the same rule, but ceased to have boys sooner. In a word, the sex came from the male or female quality of the ovum; the male ones were most likely to be fecundated in youth; afterward, during the fullest activity of the woman's sexual life, the female eggs were most numerous and most likely to produce; and this became less and less probable as time went on, when the male element or tendency again predominated. While upon this subject it may be well to give Dr. Charpentier's good advice to physicians as to the most prudent answer to be given when they are asked what they think the sex of the child is going to be. He suggests that they should reply to this important question by asking the mother what sex she would prefer in the child, and then giving it as his opinion that the opposite sex is the one to be looked for. In this way, if the sex turns out to be the one which he has prognosticated, he will be thought to be a wonderful man, while if it proves to be the one which the mother has wished for, she will be so pleased that she will easily overlook the error made by the doctor.

Professor Brown-Séquard remarks that nitrogen is of considerable importance in respiration, and he thinks that physi-

ologists will find, however much to their surprise, that oxygen is much less needed for the regular action of our organs than has been thought hitherto. He also thinks that it must now be admitted that carbonic-acid gas is much less toxic than it has been taught to be up to the present time. M. Franck long ago showed that the frog's heart would continue to contract in an atmosphere containing very little oxygen; and Dieffenbach, with Magendie, found that the nerve-centers continued to act when there was but a slight trace of oxygenated blood in them, and that during an attack of cholera, when the blood contains much less oxygen than in asphyxia, the brain still continues to act for hours. Again, he shows that it has been possible to reduce the quantity of oxygen in the blood to the fifty-fifth part of the normal quantity without depriving an animal of life, while in asphyxia the quantity of oxygen is never less than three per cent. He concludes, therefore, that some other cause must be at work in asphyxia besides the diminution of oxygen, and looks in various directions for this new factor. As to the question of its being a poisoning by carbonic-acid gas, M. D'Arsonval and M. Brown-Séquard gave animals as much as 60 per cent. of this gas without killing them, and they themselves breathed a twenty-per-cent. dilution without feeling any inconvenience. They compare this result with that of the famous experiments of M. Gréhant, who quickly killed animals by making them breathe a mixture of carbonic-acid gas and oxygen, and conclude that the difference arose from the fact that they had used air to mix with the carbonic-acid gas, and not oxygen. He thinks that the air had the advantage of containing nitrogen, and that this gas must have a most important part to play in respiration. How nitrogen acts, M. Brown-Séquard does not know as yet, but calls the attention of physiologists to the fact that it has some sort of influence, and proposes to continue his experiments with a view to finding out this action if possible.

To recur to the subject of sex in children, I must mention the studies of M. Dupuy on the influence of the menstrual period on the production of boys or girls. He has collected statistics from more than two hundred families, containing over a thousand children, which go to show that when the sex of the first child is known it is possible to tell beforehand what the sex of the next one will be, as it will depend on the menstrual period during which it is conceived; and he goes so far as to state that the sex of the second child can be fixed beforehand by following certain rules. He says, for instance, that if the first child was conceived in a menstrual period which may be called, for convenience, number one, and if it was of the male sex, then all the children who are conceived in the eleventh, thirteenth, fifteenth, one hundred and fifth, or one hundred and seventh following periods will also be males, while those that are conceived in the other periods, such as the twelfth, sixteenth, or one hundred and sixth, etc. (or the periods with even numbers succeeding the first conception), will be females; so that a father who wishes to have a daughter, after having had a son the first time his wife conceived, needs only to count the menstrual periods that his wife has had since her last accouchement, and then see that the next child is conceived during an even-number period, such as the fourth, sixth, or eighth after the first confinement. If the first child has been a girl, then the uneven-number periods must be selected in which to beget a male; that is, the first, third, or fifth period after the first confinement. After twins the rule can still be followed if there was a single placenta. The foregoing rule is good only for the offspring of a certain couple—that is, if one of a pair married again, either the husband or the wife, a new estimate would have to be made, as in the first case, based on the sex of the first child born to the new couple, and counting the periods

as before. M. Dupuy, who gave this communication to the *Société de médecine pratique*, is an old Paris physician. He says the rule is a correct one in practical application; he can not explain the regularity with which it works, but has found it to be constant.

The statistics of the Paris faculty of medicine, published for the year 1887-'88, show 373 graduates, of whom 321 were French. Fifty were foreigners, and two were women. One of the latter was a French subject, Mme. Sollier, a colored lady of Martinique origin, and the other was a Roumanian lady. The list of male graduates comprises those of all nationalities. Thirty-six were Russians. Americans stand next in order of numbers, but almost all of them were Spanish students from the South American states; only one was from the United States. At present the number of students enrolled on the books of the faculty is 3,782. Of these, 114 are women. Only one of them comes from the United States, and only two men come from there. Twelve of the women are French, 90 are Russian, and there are a few English, Greek, and Austrian. The male foreigners number more than 560, including 140 Russians and Poles, 130 Spaniards and Spanish Americans, 19 Greeks, 56 Turks, and the others from various European states, there being 34 Englishmen.

M. Guéniot reports a case of double placenta in a single birth. He presented the placenta in question to the Academy of Medicine as having a certain interest owing to the medico-legal aspects of such a case. This double placenta came from a secundipara who was delivered of a female child at eight months and a half. Each placenta resembled one of about seven or eight months. They were separated by a membranous interval of about three centimetres at its center, and of about seven centimetres at the ends. They both received the arteries going to the cord, also the funicular veins. The cord itself was inserted upon the membranes, and looked like an ordinary one for the first few inches, but beyond that Wharton's gelatin was no longer found, and it divided into two portions which were implanted upon the membranes. Dr. Guéniot calls attention to the clinical difficulties in such a case if there should be a retention of the placenta, and to the care that should be used in inspecting the cord and membranes in every case, following the cord to its insertion instead of throwing it aside.

Chromatic Asymmetry of the Iris.—"It is well known," says the "Lancet," "that the iris may change color with the lapse of time, and pass, for instance, from blue to green. M. Féré directs attention to the color of the iris in the subjects of nervous disease. In lunatic asylums a blue iris is considered by the uninitiated to indicate insanity, but Féré's statistics do not lend any support to this idea. Asymmetry in the color of the irides, however, appears to show that its possessor belongs to the neuropathic class. It is very frequent in the insane, in epilepsy, and in hysteria; twenty-six per cent. of epileptics were found to have the sign, and about the same percentage obtained in hysterics. This iridic stigma, it is thought, may prove of practical value."

Lardaceous Degeneration of the Stomach.—"Although but little mention is made by works on pathological anatomy of lardaceous degeneration of the stomach," says the "Lancet," "yet Edinger states that this lesion is frequent enough. The muscular fibers and the walls of the vessels are attacked, and Edinger observed a hyperplasia of the connective tissue of the mucosa. The epithelium of the gastric glands was not found to be degenerated. In one case there was an ulcer in the smaller curvature; in another the kidneys showed interstitial changes. In some of the cases the gastric juices were tested during life, and found not to contain hydrochloric acid, although pepsin was freely secreted. The chemical defects consisted chiefly in the proteids not being peptonized and the development of intense gastric fermentations."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 17, 1888.

DISORDERS OF THE LIVER AS A CAUSE OF HÆMOR-
RHOIDS.

IN these days of surgical energy, the lesson can not too often be inculcated that in many cases it is not enough to destroy a local lesion, but that the whole state of the patient must be attended to. This lesson is wholesomely brought out in a recent article by Dr. L. H. Petit, of Paris, in the "*Bulletin général de thérapeutique*," on the treatment of certain hæmorrhages on the theory that they depend upon an affection of the liver. The idea, to be sure, is not a new one, for, besides the general impression that the bleeding from hæmorrhoids is often salutary, it is found that the ancients entertained the theory of the dependence of some hæmorrhages on abnormal conditions of the abdominal organs. In cases of bleeding from the right nostril, for example, Galen prescribed the application of cups over the liver, and for bleeding from the left nostril he applied cups over the spleen. Some years ago M. Verneuil became impressed with the relationship between hæmorrhoids and disordered states of the liver, and at his instigation M. Duret examined into the question from an anatomical point of view, particularly with reference to the anastomoses between the portal radicles and the hæmorrhoidal veins. These investigations, together with clinical observation, were so convincing to M. Verneuil that he almost abandoned the usual operations for hæmorrhoids, and now relies nearly always on simple dilatation of the anus, with the addition of interstitial cauterization and, when the piles are very voluminous and vascular, the use of Paquelin's cautery.

Two years ago Mr. Alexander Harkin contributed a remarkable article to the "*Lancet*," sustaining the same theory and giving a number of histories of cases showing the dependence of hæmorrhoids on hepatic trouble, together with one of a case of vicarious hæmorrhage from the lower lip that had supervened on the treatment of hæmorrhoids by ligation. Mr. Harkin quotes the late Dr. Van Buren's forcible remarks upon the influence of obstruction of the abdominal circulation by overdistension of the large intestine, an abdominal tumor, or a congested liver upon the valveless hæmorrhoidal veins; and asks how surgeons can go on in the indiscriminate removal of hæmorrhoids by the ligature, by the actual cautery, or by the *écraseur* to the neglect of causative abdominal affections, and how physicians can content themselves with the routine of turning over their hæmorrhoidal patients to the surgeons.

All these facts are forcibly set forth in M. Petit's article, and he fortifies the theory to which they relate by putting on record a number of previously unpublished notes of cases, some of hæmorrhoids, others of epistaxis, and still others of hæmop-

tysis. Even traumatic hæmorrhages, as he shows, are not wholly uninfluenced by disorders of distant viscera. It is generally the liver that is at fault, and in most of the cases given it was enlarged. The treatment found efficacious consisted mostly in the application of blisters over the liver, but sometimes in the use of the cold douche to the same part. In most instances where disease of the liver has been ascertained to exist, this treatment has promptly arrested or greatly diminished the hæmorrhage, and in many of them it has gradually cured or decidedly mitigated the hepatic trouble itself. It is evident that there was some substantial foundation for the old injunction to "unload the portal circulation."

THE ÆTIOLOGY OF EPILEPSY.

THE general tendency of contemporary research and deduction seems to have set decidedly against allowing any very great pathogenetic influence to heredity. It is still freely admitted that predispositions are inherited—that is to say, that certain children are born with inherited constitutional peculiarities that tend to make them more readily fall a prey to accidental causes of disease—but the necessary conjunction of an occasioning cause is more and more insisted upon, even if that occasioning cause acts before birth. As M. Marie put it about a year ago, in the "*Progrès médical*," "I admit that a child may have been born an epileptic, provided the cause attacked it during intra-uterine life, but what I can not admit is that that child can have been conceived an epileptic." That writer was insisting upon the rarity of inherited epilepsy and upholding the theory of an accidental physical cause of the disease, usually the result of infection. It is not to be understood that he maintained the infectious nature of epilepsy as a disease, but simply that the exciting causes of epilepsy were commonly the relics of some infectious malady, notably the infectious fevers of childhood, syphilis, and septic puerperal affections.

In a recent number of the same journal, M. Lemoine, an adjunct physician to the Bailleul Asylum, expresses his entire concurrence with M. Marie, and elaborates the doctrine in a most ingenious and interesting manner. It is true, he says, that measles, scarlet fever, and the like are so common that hardly any child escapes them, and yet only a few become epileptic. This may be held up as an objection to the theory, but he replies that not every syphilis is cerebral, and not every cerebral syphilis gives rise to epilepsy; to do so, he implies, it must affect the cerebral cortex, and the epileptic phenomena most commonly make their appearance when the original lesions have yielded to medication and the parts have entered upon the cicatricial stage of repair. In the case of other infectious diseases also, epilepsy is commonly among the remote effects of an exceptional localization of the poison in the central nervous system. Epilepsy, says M. Lemoine, often follows in the wake of infantile paralysis, and it is frequently seen in persons who are the subject of some arrest of physical development, such as asymmetry of the face and the like, which defects, he thinks, are, in common with infantile paralysis, due to disseminated lesions of the trophic portion of the central nervous system.

Incidentally he draws an interesting comparison between infantile paralysis and a paralytic affection to which young dogs are subject. M. Mathis, of the Veterinary School at Lyons, professes to have discovered the microbe of this disease, and it is stated that many consider it identical with infantile paralysis in the human subject. M. Lemoine predicts that infantile paralysis will yet be shown to be of infectious origin.

MINOR PARAGRAPHS.

THE ALLEGED FALSE PASSAGE IN THE CASE OF THE LATE GERMAN EMPEROR.

SIR MORELL MACKENZIE's allegation that Professor von Bergmann made a false passage—one that led to the formation of a diffuse abscess—in endeavoring to replace a tracheotomy-tube in the case of the late German Emperor, has called forth a statement, signed by Professor Virchow and Professor Waldeyer, that to the ordinary mind seems to set the question at rest; but Sir Morell Mackenzie and Mr. Hovell have published rejoinders in which they virtually deny the accuracy of Virchow and Waldeyer's conclusions. On another page we reprint these documents from the "British Medical Journal." The German necroscopists declare that the tissues in which the alleged abscess must have been situated were found at the autopsy "normal and showing no signs of cicatrization." Mackenzie replies: "It is quite true that there was no cicatrization. No cicatrization is ever present after death where a diffuse abscess has remained in a state of activity up to a few days of the patient's death." And he accounts for the failure to find pus in the pre-tracheal tissues by the fact that in dying persons suppuration often ceases a few days before death. All this may be granted, but it is no answer to Virchow and Waldeyer's statements. It is plain that, if there had been an abscess in the situation referred to, either its cavity or a cicatrix must have remained, whether pus was found or not. It is inconceivable that its situation should have been found occupied by normal tissues. There are other points of disagreement in the statements, but they involve questions of veracity, or at least of accuracy of observation, and their discussion by us is wholly unnecessary.

THE "MARITIME MEDICAL NEWS."

WE have received the first number of this new journal, dated November, 1888. It is a bi-monthly of twenty-six double-columned pages, published at Halifax, Nova Scotia, and edited by D. A. Campbell, M. D., and Arthur Morrow, M. B., of Halifax; J. W. Daniel, M. D., M. R. C. S., and L. C. Allison, M. B., of St. John; and James McLeod, M. D., of Charlottetown. The new journal takes its name from the maritime provinces of British America, within the reach of whose medical men, it says, there has hitherto been no professional journal "which they could regard with any lively sense of interest and ownership." The contents of the first number are of interest and value, and we have no doubt that the "News" has a creditable career before it.

THE TREATMENT OF PYOSALPINX BY ASPIRATION.

IN cases of distension of the Fallopian tube it is doubtless desirable to have some efficient resource less radical than removal of the tube and ovary. The withdrawal of the fluid by puncture has, of course, suggested itself to many minds, but the difficulty in most cases of making a precise diagnosis without opening the abdominal cavity has justly been looked upon as

rendering laparotomy the safer course in general. In a recent number of the "British Medical Journal," Mr. R. H. B. Nicholson, of Hull, gives the notes of a case of double pyosalpinx in which he effected a cure by aspiration. He thinks that the result proves that, as compared with Tait's operation, "the less heroic treatment was the better, and certainly the less dangerous"—a conclusion that, it seems to us, further trials will be needed to justify.

THE CURE OF A CASE OF SCLERODERMA.

IN the "Archiv für Kinderheilkunde" Dr. J. Friedländer reports the history of a case of scleroderma that he has succeeded in curing. According to an abstract given in the "Centralblatt für klinische Medizin," the patient was a girl, five years old, in whom the disease had existed for about six months and was advancing in development and extent. The treatment, which took about six months to effect a cure, consisted in daily baths of a temperature of 80-6° F., each bath lasting for three hours, daily massage of all the indurated parts, inunction with oil every evening, envelopment in flannel at night, the administration of preparations of iron, the use of albuminous food, and free exposure in the open air by day.

THE VULVO-VAGINAL CATARRH OF LITTLE GIRLS.

M. SUCHARD, of Lavey, France, reports in the "Revue mensuelle des maladies de l'enfance" an instance in which twelve girls, between six and fourteen years old, who had been sent to Lavey on account of slight scrofulous affections, were all given a bath together in one tank, their genitals having previously been examined. On the fourth day afterward, one of them, six years old, was found to be affected with vulvo-vaginal catarrh, and in five days more all the others were attacked with the same disease. Dr. Sprengel, of Dresden, who furnishes a summary of M. Suchard's report to the "Centralblatt für Chirurgie," remarks that it was undoubtedly through the medium of the water that the infection was conveyed to the eleven children who were attacked after an interval following the development of the first case, but that in the case of the child who first showed the disease a like origin is not established with certainty.

PEPTONIZED-POTATO BISCUITS.

ACCORDING to the "Progrès militaire," quoted in the "Revue générale de clinique et de thérapeutique," the military storehouses of France are furnished with large quantities of biscuits "or croquettes of peptonized potatoes. They are expected to keep for two years, but those stored in June, 1887, have already been found spoiled. Moreover, each biscuit contains 150 grains of peptones, and, according to authorities cited by the military journal mentioned, from 170 to 375 grains of peptones may produce fatal poisoning. It follows that, if an officer or soldier deprived of all other food, as he might be in time of war, were to eat two of the biscuits at a meal, he would be poisoned.

VIVIPAROUS FROGS AND INSECTS.

UNLESS there is a reporter's error in an account of the proceedings of a recent meeting of the *Deutsche Gesellschaft für Gynäkologie*, given in the "Deutsche Medizinal-Zeitung" (copied from the "Archiv für Gynäkologie"), there must be viviparous frogs and insects in Prøyer's laboratory; for Dr. Ahlfeld having described certain visible movements of the abdominal wall that he had observed in pregnant women, his

opinion that they were due to respiratory efforts on the part of the foetus was combated by Dr. Wiener, whereupon Dr. Ziegenspeck remarked that in Preyer's laboratory he had seen such intra-uterine movements in frogs and insects (*solche intra-uterine Bewegungen an Fröschen und Insekten*).

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 13, 1888:

DISEASES.	Week ending Nov. 7.		Week ending Nov. 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	42	4	20	11
Scarlet fever.....	140	23	139	28
Cerebro-spinal meningitis...	2	1	2	2
Measles.....	160	6	136	11
Diphtheria.....	115	31	66	24
Small-pox.....	2	0	0	1

The Health of New York City.—During the four weeks ending Tuesday, November 13th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 145 cases and 82 deaths; scarlet fever, 491 cases and 80 deaths; cerebro-spinal meningitis, 6 cases and 5 deaths; measles, 513 cases and 27 deaths; diphtheria, 360 cases and 104 deaths; small-pox, 3 cases and 1 death.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 4 to November 10, 1888:*

BAILY, JOSEPH C., Lieutenant-Colonel and Assistant Medical Purveyor, will, by direction of the Secretary of War, transfer at once the public funds for which he is now responsible to Captain Henry Johnson, Medical Storekeeper, who will assume temporary charge of the medical purveying depot in New York city, retaining charge thereof until relieved in person by Lieutenant-Colonel E. P. Vollum, Surgeon, under his assignment as Acting Assistant Medical Purveyor, to whom Captain Johnson will then transfer the public funds. Par. 1, S. O. 257, A. G. O., Washington, D. C., November 3, 1888.

McELDERY, HENRY, Major and Surgeon, is, by direction of the Secretary of War, granted leave of absence for two months, to take effect on the completion of his present duties. Par. 3, S. O. 256, A. G. O., Washington, D. C., November 2, 1888.

EWEN, CLARENCE, Captain and Assistant Surgeon, is relieved from duty at Fort Sidney, Nebraska, to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer, Madison Barracks, New York, for duty at that post. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

APPEL, DANIEL M., Captain and Assistant Surgeon, is relieved from duty at Fort Davis, Texas, and will report in person to the commanding officer, Fort Sill, Indian Territory, for duty at that post, reporting by letter to the commanding general, Department of the Missouri. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

HOFF, J. VAN R., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 134, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, November 1, 1888.

PRICE, CURTIS E., Captain and Assistant Surgeon, is granted leave of absence for two months, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

WOOD, MARSHALL W., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

COCHRAN, JOHN J., Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from temporary duty at Headquarters Division of the Pacific, and will report in person to the commanding officer, Fort Adams, Rhode Island, for duty at that post. Par. 2, S. O. 256, A. G. O., Washington, November 2, 1888.

BRADLEY, ALFRED E., First Lieutenant and Assistant Surgeon (recently appointed), will, by direction of the Secretary of War, report in person to the commanding officer, David's Island, New York, for duty at that depot, reporting by letter to the superintendent of the recruiting service, New York city. Par. 14, S. O. 260, A. G. O., November 7, 1888.

Society Meetings for the Coming Week:

MONDAY, *November 19th*: New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *November 20th*: New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburgh Medical Association; Baltimore Academy of Medicine.

WEDNESDAY, *November 21st*: Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

THURSDAY, *November 22d*: New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private).

FRIDAY, *November 23d*: Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *November 24th*: New York Medical and Surgical Society (private).

Letters to the Editor.**THE ANTISEPTIC FORCEPS LOCK.**

BROOKLYN, *November 5, 1888.*

To the Editor of the New York Medical Journal:

SIR: I am greatly indebted to Dr. Wathen for calling my attention to the instrument described in the "Illustrirte Monatschrift der ärztlichen Polytechnik." I was not aware of the existence of a published description of any such instrument. As stated in my first communication, my efforts were in the direction of overcoming the objection to the French lock, which I freely admit I worked from as a basis.

CHARLES N. DIXON JONES.

Book Notices.

A Practical Treatise on the Medical and Surgical Uses of Electricity; including Localized and General Faradization, Localized and Central Galvanization, Franklinization, Electrolysis, and Galvano-cautery. By GEORGE M. BEARD, A. M., M. D., and A. D. ROCKWELL, M. D. Sixth Edition, revised by A. D. ROCKWELL, M. D. With nearly Two Hundred Illustrations. New York: William Wood & Co., 1888. Pp. xxx-758.

THIS book was first given to the profession in 1872, and since that time six editions have appeared. The work has been translated into German and has been sold largely both in that country and in England, and, whatever may be its merits or demerits, these facts have a certain *a priori* value in determining its worth and its position in the medical literature of our time. Previous to the writings of the authors upon this subject electricity was still too commonly regarded as a mere stimulant, and its use restricted in the main to the various forms of paralysis. In the original edition they took broader grounds, and maintained that electrization, besides being a local stimulant, exercised also an influence over general and local nutrition, at once "unique and unrivaled," and that the accepted system of making the applications exclusively local was both illogical and inconsistent.

For the purpose of bringing the system as a whole under the influence of the current, they suggested and described in detail a method now familiar to the profession under the name of general electrization, asserting that by its use the success of electro-therapeutics could be materially enhanced and its sphere very greatly widened, so as to include its use in a variety of frequent and distressing constitutional morbid conditions in which merely localized electrization was but imperfectly indicated. While some do not agree with these conclusions, it is perfectly safe to say that among those who have had practical experience in the use of electricity by this method their correctness is generally acknowledged. That the work should have held its own through so many years, outliving indeed most of the books on the same subject since published, argues well for the worth of the principles which it first enunciated, and indicates that in other respects it has been kept abreast of subsequent developments in this department of therapeutics. In the present edition the changes and additions are restricted mostly to the chapter on Diseases of Women. The chapter has indeed been almost entirely recast, the new matter consisting more especially of descriptions of the treatment of uterine fibroids after the method of Apostoli, and of the use of the galvanic current to promote the absorption of old exudations associated with chronic pelvic inflammation. While according much credit to Apostoli for what he has done in suggesting a better therapeutic method, Dr. Rockwell does "not believe that a more extended experience will fully confirm everything that has with so much enthusiasm been maintained by some of his followers." He thinks that it is seldom if ever possible to dissipate a fibroid tumor entirely by electricity, although in the majority of cases the size of such growths can be reduced to a greater or less extent. Even a very slight reduction in size will frequently cause most marked alleviation of the discomforts of the patient, and, so far as symptoms are concerned, result in a practical cure.

GENERAL LITERARY NOTES.

AMONG recent foreign publications we note the following:

F. ALCAN, Paris.—Martineau, "Leçons sur la thérapeutique de la métrite." (3fr.) — P. Aubry, "La contagion du meurtre." — M. Lannois, "Chorée héréditaire."

ASSELIN & HOUZEAU, Paris.—J. Gottstein, "Maladies du larynx." (7fr.) — V. Hanot and A. Gilbert, "Études sur les maladies du foie." (25fr.)

J. B. BAILLIÈRE & FILS, Paris.—E. Nacé, "Traité pratique de bactériologie." (8fr.) — J. C. F. Guyon, "Leçons cliniques sur les affections chirurgicales de la vessie et de la prostate." (16fr.) — P. Moreau, "La folie chez les enfants." (3fr. 50.) — A. Charpentier, "La lumière et les couleurs au point de vue physiologique." (3fr. 50.) — E. Couvreur, "Le microscope et ses applications à l'étude des végétaux et des animaux." (3fr. 50.) — L. Garnier, "Ferments et fermentations." (3fr. 50.) — R. Chabannes, "Traitement de la dyspnée par les inhalations d'acide carbonique." (2fr.) — Rafin, "Étude clinique sur le massage appliqué au traitement des fractures juxta-articulaires." (1fr. 50.) — Coste de Lagrave, "Hypnotisme." (2fr.) — J. Chaumier, "Essai sur le mal de tête." (2fr. 50.) — Galezowski and Koppf, "Hygiène de la vue." (3fr. 50.) — Gallois, "Douze cents formules." (3fr. 50.) — A. Mazet, "Asepsie et anti-sepsie." — L. Reuss, "La prostitution au point de vue de l'hygiène et de l'administration en France et à l'étranger." (7fr. 50.) — G. Bécavin, "L'École de Salerne et les médecins salernitains." (2fr. 50.)

O. BERTHIER, Paris.—Moncorvo, "De l'asthme dans l'enfance et de son traitement." (3fr. 50.) — A. Veillard, "Formulaire clinique et thérapeutique pour les maladies des enfants." (4fr.) — A. Clopatt, "Études sur l'hystérie infantile." (3fr.) — H. Huchard, "Quand et comment doit-on prescrire la digitale?"

O. DOIN, Paris.—V. Parant, "La raison dans la folie." (7fr.) — H. Verneuil, "Les grandes fièvres à travers les découvertes." (2fr. 50.) — L. Petit, "L'hystérie pulmonaire." — C. Miot, "De l'obstruction des fosses nasales consécutive à l'hypertrophie de la lame quadrangulaire de la cloison."

H. LAMERTIN, Brussels.—G. Tournay, "Du mécanisme de la délivrance et de l'intervention du praticien dans cette période de l'accouchement."

LECROSNIER & BABÉ, Paris.—Miot and Baratoux, "Traité théorique et pratique des maladies de l'oreille et du nez." Parts 1 and 2. (10fr.) — Baumel, "Maladies de l'appareil digestif." (17fr.) — P. Mavrikos, "Contribution à l'étude de l'érysipèle chez le nouveau-né." (1fr. 50.) — Fieuzal and Haensell, "Recherches sur l'anatomie et l'histologie normales et pathologiques de l'œil." ("Annales du laboratoire de l'hospice national des Quinze-Vingts.") Vol. ii, part 1. — G. Combemale, "La descendance des alcooliques." (3fr. 50.) — L. Labbé and C. Remy, "Traité des fibromes de la paroi abdominale." (7fr.) — J. Rochard, "Traité d'hygiène sociale." (10fr.) — C. Bourdillon, "Psoriasis et arthropathies." (5fr.) — M. L. Grasset, "Leçons sur l'hystéro-traumatisme." — A. Journiac, "Recherches cliniques sur le délire hypocondriaque." (2fr. 50.) — M. Lamiot, "De la situation des fœtus et de la disposition des œufs dans les cas de grossesse gémellaire." (3fr. 50.) — G. Martin, "Nouvelles études sur les contractions astigmatiques (croissantes de la papille, migraine et migraine ophthalmique)." (2fr. 50.) — Pouillet, "Étude médico-philosophique sur les pertes séminales involontaires." (3fr. 50.) — J. A. Fort, "Nouveau procédé pour guérir les rétrécissements de l'urèthre rapidement et sans aucun danger." (2fr.)

G. MASSON, Paris.—G. Bernutz, "Conférences cliniques sur les maladies des femmes." (15fr.) — A. Gouguenheim and P. Tissier, "Phthisie laryngée." — E. Besnier, "Sur la pelade."

BUREAUX DU "PROGRÈS MÉDICAL," Paris.—C. Debierre, "Sur les anastomoses du nerf médian et du nerf musculo-cutané au bras et sur l'anastomose du médian avec le cubital de l'avant-bras." (9fr. 50.) — S. Pozzi, "La suture perdue continue à étages superposés au catgut, son emploi en gynécologie." (9fr. 50.) — H. Séglas and P. Chaslin, "Catatonie." (1fr. 25.) — Gilles de la Tourette, "Des attaques de sommeil hystérique." (1fr. 50.) — E. Neumann, "Nouvelles études sur le rôle de la prédisposition nerveuse dans l'étiologie de la paralysie dite à frigore." (1fr.) — Baratoux, "La maladie de l'Empereur Frédéric III." (1fr.) — P. S. Pampoukis and S. N. Chomatianos, "Recherches cliniques et expérimentales sur l'hémosphérinurie quinique." (9fr. 50.) — V. Pison, "De l'asymétrie frontofaciale dans l'épilepsie." (2fr.)

C. REINWALD, Paris.—C. Gegenbaur, "Traité d'anatomie humaine." Transl. by C. Julin. Part ii.

G. STEINHEIL, Paris.—L. A. de Saint-Germain, "De la prophylaxie de la rage, à propos de la rage chez les enfants." (1fr.) — L. Dumas, "Sur l'identité probable de l'œdème des nouveau-nés avec la phlegmasia alba dolens." — F. Lejars, "La masse de Teichmann."

BERGMANN, Wiesbaden.—J. Stilling, "Schädelbau und Kurzsichtigkeit." (4M. 60.)

W. BRAUMÜLLER, Vienna.—Oberländer and Neelsen, "Beiträge zur Pathologie und Therapie des chronischen Trippers." (8M.) — L. Schrötter, "Vorlesungen über die Krankheiten des Kehlkopfes, der Luftröhre, der Nase und des Rachens." Part 3. (1M. 80.)

BREHSE, Leipsic.—C. Zahn, "Anleitung zum Gebrauche der sogenannten Schweninger-Kur und verwandter diätetischer Heilmethoden." 10th ed. (1M.) — C. Zahn, "Fehler und Gefahren bei dem Gebrauche der modernen Entfettungskuren." 6th ed. (1M.)

F. DEUTICKE, Vienna.—M. Rubner, "Lehrbuch der Hygiene." Part 1. (2M.)

F. ENKE, Stuttgart.—R. von Krafft-Ebing, "Psychopathia sexualis mit besonderer Berücksichtigung der konträren Sexualempfindung." 3d ed. (4M.) — R. von Krafft-Ebing, "Eine experimentelle Studie auf dem Gebiete des Hypnotismus." (1M. 60.)

G. FISCHER, Jena.—E. Ziegler and C. Nauwerck, "Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie." Vol. iii, part 5. (3M.) — T. Boveri, "Zellenstudien." Part 2. (7M. 50.) — P. Stöhr, "Lehrbuch der Histologie und der mikroskopischen Anatomie des Menschen." 2d ed. (7M.)

Fock, Leipsic.—K. Ruhemann, "Ueber Lungensyphilis." (1M.) — W. Sommer, "Ueber Trunksucht und deren schädliche Folgen für das Gehirn und das Nervensystem." (0M. 75.) — O. Brieger, "Ueber das Vorkommen von Pepton im Harn." (1M. 50.)

H. GEORG, Basel.—F. Leuba, "Die essbaren Schwämme und die giftigen Arten, mit welchen dieselben verwechselt werden können." Fasc. 1 and 2. (2M. 40.)

GNEVKOW & VON GELLHORN, Kiel.—E. Stemann, "Beiträge zur Kenntniss der Salpingitis tuberculosa und gonorrhoea." (1M.) — E. Riemann, "Ueber den Zusammenhang von Nierendislokation und Magenerweiterung." (0M. 60.)

GRÄFE & UNZER, Königsberg.—A. Toop, "Ueber den heutigen Stand der Behandlung komplizirter Schädelfrakturen." (1M. 50.)

G. HERTZ, Würzburg.—G. Bonne, "Ueber das Fibrinferment und seine Beziehungen zum Organismus." (3M.)

HEUSER, Neuwied.—W. Brügelmann, "Ueber Asthma, sein Wesen und seine Behandlung." (1M. 50.) — Woltering, "Diätetisches Handbuch für Aertze und Studierende." (Each fasciculus, 1M.) — F. Maack, "Zur Einführung in das Studium des Hypnotismus und thierischen Magnetismus." (0M. 75.)

A. HIRSCHWALD, Berlin.—E. Henoch, "Vorlesungen über Kinderkrankheiten." 4th ed. (17M.) — A. Bramsen, "Die Zähne unserer Kinder während des Heranwachsens." (1M.)

R. ISAAC, Charlottenburg.—J. L. Kleist, "Die Krankheit Friedrich des Dritten und der Kampf gegen Mackenzie." (0M. 75.)

H. KIRSCH, Vienna.—A. Ricker, "Pastoral-Psychiatrie zum Gebrauche für Seelsorger." (2M.)

KOEBNER, Breslau.—E. Kaufmann, "Die Sublimatintoxikation." (2M. 40.)

L. KÖHLER, Breslau.—K. Bornstein, "Einiges über die Zusammensetzung des Blutes in verschiedenen Gefässprovinzen." (1M.) — C. Heintze, "Ueber die Tuberkulose des Bauchfells." (1M.) — A. Loewy, "Ueber die forensische Bedeutung der Uterusruptur." (1M.) — E. Loewe, "Ueber das Auftreten der rothen Diazoreaktion Ehrlich's bei Krankheiten." (1M.) — M. Meyer, "Die Antiseptik in der Geburtshilfe zur Prophylaxis des Kindbettfiebers." (1M.) — F. von Quillfeldt, "Ueber Syphilis hereditaria tarda." (1M.) — B. Alexander, "Statistik der Rhachitis und des Spasmus glottidis." (1M.) — B. Bienenstock, "Zur Therapie der Psoriasis." (1M.) — A. Winkler, "Moderne Behandlung der Blasenwunden." (1M.)

LIPSIUS & TISCHER, Kiel.—R. Dönhoff, "Beitrag zur Statistik und pathologischen Histologie der Tubenerkrankungen." (1M.) — O. Gerloff, "Beitrag zum Strychnin-Diabetes." (0M. 80.) — M. Woll-

heim de Fonseca, "Beitrag zur Frage der nächtlichen Harnabsonderung und zur Physiologie der Harnsammlung in der Blase." (1M.) — H. Henningsen, "Beitrag zur Statistik der Fettgeschwülste." (1M.) — L. Hoche, "Ein Beitrag zu der Lehre von der Radikaloperation von Hernien, speciell bei Kindern." (0M. 60.)

LUTZ, Stuttgart.—W. W. Ireland, "Herrschermacht und Geisteskrankheit." (2M.)

MAYER, Aachen.—A. Reumont, "Syphilis und Tabes dorsalis." 2d ed. (2M.)

MOSER, Tübingen.—H. Tuoss, "Beiträge zur pathologischen Anatomie der Placenta. Veränderungen bei Syphilis und Nephritis." (0M. 80.) — A. Greeff, "Die Stirnmuskulatur des Menschen." (1M.) — W. Halm, "Beiträge zur Symptomatologie der Trochlearislähmung." (0M. 80.)

NEUENHAHN, Jena.—M. Jacobi, "Ueber den Einfluss der parietalen Adhäsionen auf die objektive Diagnose der Ovarialtumoren." (0M. 80.) — PAREY, Berlin.—A. John, "Der Trichinenschauer." (3M. 50.)

A. PFAUTSCH & Co., Stuttgart.—H. Norvid, "Mackenzie und seine Verleumder." (0M. 60.)

POHLE, Jena.—S. Bokofzer, "Die Verwendung des Cocain in der Chirurgie." (0M. 75.) — R. Hastenpflug, "Ueber Vaginal-Myome." (1M.) — M. Reuter, "Ovariotomie bei Gravidität." (0M. 75.)

G. REIMER, Berlin.—R. Virchow, "Medicinische Erinnerungen von einer Reise nach Aegypten." (0M. 80.)

ROTH, Giessen.—C. Eckhard, "Beiträge zur Anatomie und Physiologie." (12M.)

STAUDE, Berlin.—A. Gutzmann, "Das Stottern und seine gründliche Beseitigung durch ein methodisch geordnetes und praktisch erprobtes Verfahren." Part 2. 2d ed. (5M. 50.)

URBAN & SCHWARZENBERG, Vienna.—L. Landois, "Lehrbuch der Physiologie des Menschen." 6th ed. (21M.)

VANDENHOECK & RUPRECHT, Göttingen.—J. Gerland, "Ueber intrathoracische Tumoren." (0M. 60.) — W. Hildebrandt, "Ueber den therapeutischen Werth der Borsäure bei Mittelohreiterungen." (0M. 80.) — E. Becker, "Beiträge zur Geschichte der Aspirationspneumonie." (1M. 80.)

F. C. W. VOGEL, Leipsic.—F. A. Hoffmann, "Vorlesungen über allgemeine Therapie mit besonderer Berücksichtigung der inneren Krankheiten." 2d ed. (10M.) — E. Lesser, "Lehrbuch der Haut- und Geschlechtskrankheiten." Part 1. 4th ed. (6M.) — O. Vierordt, "Diagnostik der inneren Krankheiten auf Grund der heutigen Untersuchungsmethoden." (10M.) — P. Zweifel, "Die Stielbehandlung bei der Myomektomie." (5M.)

VOIGT, Weimar.—F. A. Zürn, "Die Schmarotzer auf und in dem Körper unserer Haussäugethiere." Part ii, 2d half. 2d ed. (12M. 75.)

L. Voss, Hamburg.—M. Schmidt, "Aerztlicher Rathgeber für Schiffsführer." 2d ed. (3M.)

F. VALLARDI, Milan.—G. Bordoni-Uffreduzzi, "I microparassiti nelle malattie da infezione. Manuale tecnico di batteriologia." 2d ed. (In press.) — G. Inverardi, "Il meccanismo del parto nelle presentazioni cefaliche e nella podalica." (5L.)

BOOKS AND PAMPHLETS RECEIVED.

Landmarks Medical and Surgical. By Luther Holden, ex-President of the Royal College of Surgeons of England, etc. Fourth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 79. [Price, \$1.25.]

On the Preventive Treatment of Calculous Disease and the Use of Solvent Remedies. By Sir Henry Thompson, F.R.C.S., M.B. Lond., etc. Third Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 87. [Price, \$1.]

The Urine and the Common Poisons—Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. Holland, M.D., etc. Illustrated. Second Edition, revised and much enlarged. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vi-9 to 65. [Price, 75 cents.]

The Fatal Illness of Frederick the Noble. By Sir Morell Mackenzie. London: Sampson, Low, Marston, Searle, & Rivington, 1888. New York: Brentano. Pp. 6-9 to 246.

The Anomalies of the Ocular Muscles. By Dr. George T. Stevens, New York. First Paper. Second Paper. III—Differential Character-

istics of Heterophoria and Strabismus. [Reprinted from the "Archives of Ophthalmology."]

Lilly's Hand-book of Pharmacy and Therapeutics. Third Edition, Thoroughly revised. Eli Lilly & Co., 1888.

Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

The Basis of the Present Treatment of Syphilis is the theme of Dr. Ernst Schwimmer in the second supplement to the "Monatshefte f. prakt. Dermatologie" for 1888. We commend the brochure to our readers as an admirable *exposé* of the modern treatment of syphilis, and very readable withal. The subject is treated under three headings: 1. The preventive or abortive treatment of syphilis. 2. The methodical treatment of syphilis; and 3. The duration of treatment. The author is a firm believer in the specific nature of the infection and the duality of the soft and hard chancre. He is not an advocate of the excision of the chancre, believing that in most cases the induration is the primary expression of constitutional infection. The early treatment of the disease is advocated in order to prevent the worst after-effects of the dyscrasia. If the sclerosis is not well marked at first, a purely local treatment may be employed during the first three or four weeks. If a well-marked initial lesion is present at the time of the first examination, general treatment should be begun at once. For local treatment caustics should not be used; salol has been found efficacious to promote the healing of the ulcer, and mercurial plaster for the induration. Mercury is the most reliable means for combating the disease, and can be used either internally or externally, preferably the latter, either by inunction or injection hypodermically.

The various salts and combinations of mercury are fully considered in their action and mode of administration. Corrosive sublimate is preferred for internal administration, particularly in pill form. Calomel is useful in the treatment of children, and the following formula is recommended: Calomel, Dover's powder, each $1\frac{1}{2}$ –2 grains; sugar of milk, 45 grains. Divide into ten powders. Of these powders, two to three may be given daily to a nursing infant, and six to nine to a child over one year old, and their use continued for four to six weeks. The protiodide of mercury is less energetic than the bichloride, but useful in slight relapses, while we are cautioned against the use of the biniodide. Tannate of mercury is a reliable salt for internal medication, more active than the sublimate, but not so efficient as the inunction method of treatment. It causes but little disturbance of the digestive tract and can be administered for a long time in the dose of one grain and a half two or three times daily, either in solution or in pill form. The treatment by mercurial fumigation is not regarded with favor, on account of its unhandiness. Mercurial baths are of little service in the treatment of syphilis in adults, but very good in that of congenital syphilis in children, two or three baths a week being given, each containing from eight to forty-five grains of the bichloride, according to the age of the child. Special emphasis is laid upon the inunction treatment of syphilis, some forty-five grains of blue ointment being rubbed each day into the non-hairy parts of the body. Thirty to sixty rubbings are about as many as can be prudently employed in one series, and then they should be stopped for a while, some preparation of iodine being taken meanwhile. The oleate of mercury is not so active as the blue ointment. The mercurial soaps of Fanta, Unna, and Oberländer form excellent substitutes for the mercurial ointment and act very promptly. The treatment by hypodermic injection has been tried by him, the various proposed solutions having been employed from time to time. It is a valuable method where the physician wishes to have complete control of the treatment, but does not take the place of the older methods.

The treatment by one or other form of mercury should be continued until the symptoms of the disease have disappeared, and should be thoroughly carried out. The iodides are regarded as rendering good service after a thorough course of mercury. The iodides of potassium,

ammonium, and iron are those specially useful. The "mixed treatment," so called, is not considered favorably; better results are to be obtained by the separate administration of the drugs. But space will not permit us to go further in abstracting from this practical little work, and we will take only enough to give the author's two summaries, as follows:

Summary of the Use of Mercury.—a. The most reliable preparation and the most lasting in its effects is the blue ointment, which should be used, where possible, from the beginning of the treatment.

b. The subcutaneous injection of mercury is next in reliability, but must be used with caution. The least soluble preparations should be used when there are gummatous or ulcerative processes to combat, or an energetic treatment is necessary on account of parenchymatous syphilitic affections. In the slighter forms of syphilis the more soluble preparations may be used.

c. The mercurial soap and Unna's mercurial plaster-muslin are very useful, as is also the tannate of mercury.

d. As a preparatory course for the use of the stronger preparations of mercury the bichloride of mercury may be given in pill or solution.

e. As intercurrent medication, between two courses of either inunctions or hypodermic medications, the protiodide of mercury should be used.

f. The constitution of the patient should guide us in the choice of our remedies, whether we shall use a stronger or a weaker preparation or dose.

Summary of the General Treatment of Syphilis.—1. Syphilis is a chronic disease, and requires a long-continued course of treatment.

2. Mercurial treatment should be commenced as early as possible in cases with marked onset; in slighter forms somewhat later.

3. Mercurial treatment should be continued for two or three months. Then the iodide should be given for two months.

4. After four or five months' unbroken treatment, a pause of two or three months should be made. Any local lesions should be treated by local treatment.

5. In relapses the same course of treatment should be followed, only of shorter duration, say three months; if no relapse occurs within the first six months after the beginning of treatment, the second course can be deferred until the eighth to the tenth month, reckoned from the beginning of the disease.

6. The treatment with decoctions is to be employed in diseases of parenchymatous organs if such do not yield to a second course of mercury and iodides.

7 and 8. Balneotherapy and hydropathy are useful at times as final methods of treatment.

9. If the disease continues into the second year, in spite of treatment, a two-to-three-months' course of mercury and iodide is to be gone through with, or one of greater duration if marriage is proposed.

10. Generally speaking, after a year and a half to two years of well-directed and early-begun treatment, the result will be highly satisfactory.

Anthraquin in Psoriasis, Herpes Tonsurans, and Pityriasis Versicolor.—Neumann has tried this new medicament in four cases of psoriasis, two cases of ringworm, and two of pityriasis versicolor. He finds ("Allg. Wien. med. Zeit.," 1888, June 26th) that it is much less active than chrysarobin, that it acts much slower, but irritates the skin far less. That it is well adapted for the treatment of pityriasis versicolor, but too mild a remedy for inveterate psoriasis.

Epithelioma Contagiosum is the name which Neisser ("Vierteljahr. f. Derm. u. Syph.," 1888, xv, Heft 4) proposes for what has been previously known as molluscum contagiosum. He denies positively that the sebaceous glands take any part in the formation of the tumors, and he has never found in any section of these bodies the evidence of the participation of the follicular epithelium, nor any hair near enough to the tumor to suggest any connection with it. On the other hand, he has found that the process begins in the rete mucosum and grows downward, and that the transformation of the rete cells into the outer cells of the molluscum body can be readily seen. He believes that on this account the terms molluscum sebaceum, acne varioliformis, and the like must be dropped, and proposes the name epithelioma contagiosum. He is not only convinced of the contagious nature of the tumors, but believes that they are caused by a parasite which is of the nature of a coccus and of the class of *Gregarines*. This coccus he has dem-

onstrated microscopically, but has not been able to cultivate. The molluscum corpuscle is regarded by Neisser as a completely cornified, nucleated epithelial cell entirely filled with the parasite. As a neoplasm the molluscum contagiosum is an epithelioma; but, at the same time, it is a sort of retention cyst composed of abnormally developed epithelium and of corneous matter abnormally piled up among the cells of the parasite, and of the parasite itself.

Treatment of Sycosis.—In our report of July 28th Unna's division of sycosis into the hyphogenous and coccogenous forms was given, as also the treatment he proposes for the first form. In the "Monatshft. f. prakt. Dermat.," 1888, No. 11, he gives us his plan of treatment for the second form, which is better known by the name *folliculitis barbæ*, or non-parasitic sycosis. He regards shaving as a very important part of the treatment. This is to be followed in bad cases by the constant application of his carbolic-mercurial or resorcin-plaster muslin; or, if the patient will submit to a nightly treatment only, a zinc-sulphur salve muslin is to be worn during the night, followed in the morning by epilation of the pustules, washing of the part, and the application of a five-per-cent. alcoholic solution of resorcin to each affected follicle. The whole series of his "reducing agents," such as sulphur, ichthyol, resorcin, pyrogallol, and chrysarobin, may be used at night in ointments of 2 to 5 per cent. strength, or ichthyol may be employed in 10 per cent. strength as a fomentation. Mercurial ointment with 10 per cent. of carbolic acid and up to 1 per cent. of sublimate is also useful. If the patient will not allow the beard to be shaved it will be harder to cure the disease, and we must proceed by the removal of each affected hair, washing out the suppurating hair follicle, and the application to it of a zinc-sulphur or weak resorcin-sublimate salve. Scarification does harm, and general epilation should not be practiced. Only the diseased hairs should be plucked out. The rhinitis which is often present should be treated by the nasal douche with a one-per-cent. solution of ichthyol. For some time after the disease is practically cured the face should be shaved with sublimate soap, each hair that is diseased should be plucked and the follicle touched with the alcoholic solution of resorcin, and every night the face should be anointed with a resorcin or sublimate ointment or paste.

Treatment of Sweating Hands and Feet.—Unna recommends for this affection, when the parts are cold, that before the patient goes to bed he should bathe the affected parts with hot water to which has been added some irritating substance, such as camphor, mustard, or vinegar. Then, after drying, the part should be enveloped in an ointment which will cause hyperæmia, such as one of turpentine and ichthyol, each five parts, to oxide-of-zinc ointment, ten grammes. In the morning the ointment is to be washed off and the parts are to be rubbed with ice-cold water, the friction being continued till hyperæmia and warmth of the skin are induced; then the skin is to be powdered with a powder containing mustard flour. If the feet are affected, the stockings should be powdered before they are put on. Where the parts are warm, the hot and cold baths are to be omitted and ichthyol is to be used; lukewarm baths in the evening, followed by a two-and-a-half-per-cent. ichthyol ointment, washing off with lukewarm water and ichthyol soap in the morning and leaving on some of the dry soap-suds, is the method of treatment.

Treatment of Corns on the Soles of the Feet.—This very annoying affection is best treated, according to Unna ("Monatshft. f. prakt. Dermat.," 1888, No. 13), by painting a circle of zinc-clay paste about the corn, and, when this has dried on, placing inside the ring a piece of salicyl-creasote plaster muslin (salicyl 40, creasote 40); then the whole is covered over with the paste and allowed to dry. With sweating feet or where the feet are very hot, the part is to be enveloped before the dressing is dry with a soft muslin bandage; this is to be stuck fast with the paste. The dressing is to be changed once or twice a week, each time removing the loosened horny layer.

Treatment of Multiple Warts.—Unna ("Monatshft. f. prakt. Dermat.," 1888, No. 13) recommends enveloping the whole affected part with a salicylic creasote plaster muslin (20 to 40), which should be stuck on with zinc paste and covered either with a bandage or glove. An ointment composed of ten parts of salicylic acid, twenty of creasote, and enough wax and lard to make an ointment mass will be found also efficacious.

The Bacilli of Syphilis and of the Smegma.—Markuse, in the "Vierteljahresschrift für Dermatologie und Syphilis," 1888, Heft 3, examines into the present condition of the discussion over the relation of these bacilli, and also gives the results of his own investigation. He first examined the secretions from syphilitic and non-syphilitic lesions, and then microscopical sections of tissues, in order to find bacilli either of syphilis or of the smegma. In the secretion from 23 initial lesions he found bacilli only 10 times; in that of 57 papules and condylomata of the genitals and anus they were found 43 times; in that of 19 papules of the mouth and pharynx they were found but once; in 8 tertiary lesions they were absent, as also in 2 cases of vesicular and pustular syphilis. The initial lesions that gave the most positive results were those of the prepuce, frenum, glans, and labia majora. Among the initial lesions that gave negative results were one on the breast, one of the urethral orifice, and one on the labium. Bacilli of the same nature were found once in 12 cases of soft sore, once among 3 cases of balanitis, 4 times in 8 cases of simple erosion (3 of the prepuce and 1 of the sulcus coronarius). The smegma bacillus of Matterstock and others was found in every one of the 125 specimens examined. In 57 sections of a single initial lesion the bacillus of syphilis was not found. Attempts at the cultivation of the smegma bacillus were failures.

The differential marks between the bacilli of syphilis and of the smegma are not so distinct as might be desired. The smegma bacillus occurs in much larger groups than that of syphilis, but it would be very difficult if not impossible to distinguish which were syphilis bacilli and which smegma bacilli if the specimen under examination was taken from a region in which both bacilli were present. The smegma bacillus offers much greater resistance to acids than the syphilis bacillus. The resemblance between the two is at the best very great, and, though they are not yet found to be identical, it is at present impossible to regard with certainty the Lustgarten bacillus as the bearer of the syphilitic poison.

The Treatment of Syphilis by Calomel Injections has been tried by Neumann in 52 cases, 344 injections having been made. His judgment is ("Wien. med. Presse," 1888, No. 32 *et seq.*) that its effect is far less rapid and a great deal more disagreeable than that of the old reliable method of mercurial inunction.

New Inventions, etc.

A SELF-RETAINING TONGUE DEPRESSOR.

By J. J. HIGGINS, A. M., M. D.

IN examinations of the fauces, and especially in operations thereon, the need of a self-retaining tongue depressor and speculum oris is sadly felt. For all the minor operations—such as penciling, applications of remedial agents in divers ways, excision of the uvula, etc.—the convenience (in some cases the necessity) of having the use of both hands is without question. So strongly have I felt the want of a suitable instrument for such purposes in my own practice that I have been com-



pelled (the armamentarium of our instrument-makers not having one at all adapted to the regular and daily use of the practitioner) to invent and have one made for my own use. It has found such favor with all physicians who have seen it that I feel constrained to make it more generally known through the columns of your valuable paper. Mechanical description would be tedious and is unnecessary, as the

cut illustrating the instrument is a perfect representation and tells the story at a glance. It is adjustable for any size of mouth, or opening thereof—with not even discomfort, much less pain—can be handled and placed *in situ* as readily as the usual tongue depressor, and is self-retaining. It is manufactured by Messrs. G. Tiemann & Co., of this city, of the best quality of steel—handsomely nickel-plated—handle and other attachments of vulcanite, baked on and highly polished, and thoroughly aseptic in construction.

Too great credit can not be given the above-mentioned firm for their well-known superior workmanship, which is again shown in the beautiful instrument which they have produced to supply this long-felt want. Moreover, its construction is such that, by a simple turn of a milled screw, an ordinary tongue depressor of a special and improved pattern and shape is at one's service.

For the photographing of the posterior fauces or buccal cavity it is exceedingly serviceable, the sides or walls not being occluded by the instrument, as is the case with vaginal or other specula, but they are seen in their entirety.

Miscellany.

The Late Emperor Frederick: the Alleged False Passage.—"With regard to the charge made by Sir Morell Mackenzie in 'The Fatal Illness of Frederick the Noble' against Professor von Bergmann, that he inflicted a serious and indirectly fatal injury on the illustrious patient on April 12th by pushing the cannula into the tissues in front of the trachea," says the "British Medical Journal," "the following statement has been published by Professors Virchow and Waldeyer, who made the post-mortem examination:

"The undersigned declare:

"1. That in the protocol of the necropsy drawn up at the Friedrichskron Palace on June 16, 1888, there is no mention whatever of an abscess-cavity.

"2. That the large surface, nine centimetres in length, covered with gangrenous shreds, belongs to the only cavity found, of which mention is also made at the beginning of the protocol—namely, the cavity formed by the ulcerative destruction of the larynx and upper segment of the trachea, which was distended by the cotton-wool introduced at the time of embalming.

"3. That the protocol of the necropsy gives no ground for the inference that an abscess-cavity had ever existed.

"4. That the tissues in which, according to Sir Morell Mackenzie's report, and the illustration at p. 80 of his pamphlet [German edition], the cannula must have made a false passage, and the abscess in question must have existed, were at the necropsy found normal, and showing no signs of cicatrization. (See p. 102, line 3, of the report of the German physicians.)

"5. That the windpipe was opened in its whole extent down to the bronchi. (See p. 102, line 9, of the German report.)

"(Signed)

RUDOLPH VIRCHOW,

"BERLIN, October 17, 1888.

WILHELM WALDEYER."

"To this statement Sir Morell Mackenzie and Mr. Mark Hovell have published the following replies:

"Professors Virchow and Waldeyer having published a declaration in the "National-Zeitung" that there was not at the post-mortem any abscess at the front of the trachea, it is necessary to explain that an abscess may be either circumscribed or diffuse, and that the effect of ramming an unguarded cannula several times into the soft tissues in front of the trachea would be calculated to cause, as it did in this instance, a diffuse abscess.

"In a young and healthy subject it is possible that a circumscribed abscess might be formed, but, in the case of an invalid, it is extremely unlikely that such an injury would be followed by the establishment of a limiting wall, which, in point of fact, is Nature's effort to effect a cure.

"In the case of the Emperor there was not sufficient constitutional

vigor to limit the morbid process. Hence the abscess became diffused, and I saw with my own eyes at the post-mortem examination that the whole areolar tissue at the front and sides of the trachea was destroyed, leaving a large cavity, especially pronounced in the lowest part of the trachea. These cavities in the neck were in uninterrupted communication across the front of the trachea. Seen in profile, the collection of matter would produce a pyriform cavity on each side, though, of course, in my illustrative diagram (Fig. 21 in my book) the abscess is only shown on one side. When Professor Virchow spoke of a "cavity" five centimetres deep, nearly as long, the opening of which, after removing the suture, gaped to the extent of two centimetres and a half at the post-mortem examination, I felt uncertain as to whether his description applied to the diffuse abscess or not; but the description itself is extremely obscure, as will be seen from the German report (page 100) and the translation in the "British Medical Journal." The front of the neck had been plugged with bismuth and cotton-wool, and, as the secretion of pus had been entirely arrested during the last few days of the Emperor's life (as such secretions often cease in dying persons), the subcutaneous tissue did not contain any pus, as I have stated in my book (page 184). I am not surprised that the diffuse abscess was not recognized by Virchow at the post-mortem examination. Had there been a hard limiting wall, of course, it would have been seen.

"There are two other points contained in the document in the "National-Zeitung"—viz.: 1. That there was no evidence of any process of cicatrization. 2. That the tissues in front of the trachea were healthy. It is quite true that there was no cicatrization. No cicatrization is ever present after death, where a diffuse abscess has remained in a state of activity up to a few days of the patient's death. As regards the statement that the tissues in front of the trachea were normal, it may be remarked that as a quantity of bismuth and cotton-wool had remained in contact with these parts (see German pamphlet, page 100) for more than twenty-four hours, it was quite impossible for any person to judge of the condition of the tissues.

"(Signed)

MORELL MACKENZIE."

"Having been informed that Professors Virchow and Waldeyer have published a statement to the effect that at the post-mortem on the Emperor Frederick there was no evidence of an abscess having existed in front of the trachea, I consider it necessary to mention what I know of the matter.

"Subsequently to April 12th I have on many occasions caused pus to flow out by the side of the cannula by placing my fingers over the sides of the trachea, at the lowest part of the neck, and then drawing them upward, making pressure at the same time. At the post-mortem examination I saw that most of the subcutaneous tissue over the trachea had disappeared, and that there were deep cavities at the side of the windpipe at the lowest part of the neck, corresponding to the position from which I used to expel matter, as above stated.

"The larynx, with a portion of the trachea, was removed from the body, and the lungs were also removed, but the heart and lowest part of the trachea were left intact and were not examined.

"(Signed)

T. MARK HOVELL.

"October 18, 1888."

The Health of Kansas City, Mo.—For the week ending Saturday, November 10th, according to the city physician's report, there were 42 deaths, including 1 from cholera infantum, 1 from croup, 3 from diphtheria, 5 from typhoid fever, 1 from typho-malarial fever, and 1 from marasmus. The death-rate was 12.1 in a thousand of the population.

The University of the City of New York.—Dr. J. Williston Wright has resigned the professorship of surgery, and we understand that Dr. Lewis A. Stimson has been appointed to succeed him.

The Health of Michigan.—According to the returns received by the State Board of Health for the month of October (five weeks ending November 3d), diphtheria was present at 36 places, scarlet fever at 32, typhoid fever at 43, and measles at 7.

The New York Academy of Medicine.—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 19th inst., Dr. Joseph A. Andrews will read a paper on "Enucleation of the Eyeball in Purulent Panophthalmitis."

At the next meeting of the Section in Theory and Practice of Medicine, on Tuesday evening, the 20th inst., Dr. Debout d'Estrees, of Contrexéville, France, will read a paper on "Oxaluria, especially in its Relations to Uric Acid" (the discussion to be opened by Dr. E. L. Keyes, Dr. T. H. Burchard, and Dr. G. B. Fowler), and Dr. W. Van Valzah will read a paper on "The Treatment of Functional and Catarrhal Diseases of the Stomach and Intestines."

At the next meeting of the Section in Obstetrics and Gynecology, on Thursday evening, the 22d inst., Dr. A. H. Buckmaster will show "An Inexpensive Cell for Electrolysis"; Dr. R. G. Wiener will report a case of placenta prævia and show a specimen; Dr. J. R. Goffe will report a case of hysterectomy for fibroid tumor and show the specimen; and Dr. A. P. Dudley will read a paper on "A New Method of Operation for the Restoration of the Lacerated Perinæum."

At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 27th inst., Dr. S. O. Vander Poel will read a paper on "Pharyngeal Mycosis."

At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 28th inst., Dr. August Seibert will read a paper entitled "Stomach-washing in Infants, with a Demonstration on the Living Subject," and Dr. M. Allen Starr will read a paper on "Tumors of the Brain in Children."

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending November 9th:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending October 20th corresponded to an annual rate of 21 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 16, and the highest in Blackburn, viz., 29·8 in a thousand. Diphtheria caused 6 deaths in Manchester.

London.—One thousand six hundred and forty-one deaths were registered during the week, including measles, 80; scarlet fever, 33; diphtheria, 36; whooping-cough, 12; enteric fever, 19; diarrhœa and dysentery, 42. The deaths from all causes corresponded to an annual rate of 20 in a thousand. In greater London 2,004 deaths were registered, corresponding to an annual rate of 18·9 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 10; diphtheria, 8; measles, 5; whooping-cough, 5.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending October 20th in the sixteen principal town districts of Ireland was 23·3 in a thousand of the population. The lowest rate was recorded in Lurgan, viz., 5·1, and the highest in Limerick, viz., 32·4 in a thousand. In Dublin 164 deaths were registered, including measles, 1; scarlet fever, 1; diarrhœa, 5; whooping-cough, 6; diphtheria, 1; enteric fever, 6; typhus, 1; and dysentery, 2.

Scotland.—The deaths registered in eight principal towns during the week ending October 20th corresponded to an annual rate of 20·4 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 12·6, and the highest in Paisley, viz., 43·8 in a thousand. The aggregate number of deaths registered from all causes was 517, including measles, 24; scarlet fever, 10; diphtheria, 8; whooping-cough, 16; fever, 7; and diarrhœa, 27.

Gibraltar.—The secretary of the Board of Health reports under date of October 13th as follows:

At a meeting of the Board of Health this day it was decided that vessels arriving at this port with pilgrims on board should be refused admission to pratique.

Catania, Italy.—Three hundred and seventy-five deaths are reported for the month of August, 1888, including small-pox, 120, and enteric fever, 17.

Martinique.—The United States consul in his dispatch dated October 17, 1888, states that "in the fortnight preceding this date there have been 11 cases of small-pox, and 4 deaths from the same disease."

"Some sporadic cases of yellow fever have manifested themselves

here, but I can not give reliable particulars, as the Government seems reluctant to furnish any information on the subject."

In a dispatch of same date the consul states that "in the 'Moniteur' it is officially announced that a quarantine of twenty-three days, time of voyage included, has been imposed by Martinique against Florida."

Callao.—United States consular report for week ending October 6th states: "Measles still epidemic; mortality among children."

Demerara.—The United States consul, in his report dated September 30th, states that "there have been no infectious or contagious diseases reported within this consular district during the past month."

San Juan, P. R.—The United States consul reports as follows:

Week ending October 6th, yellow fever, 2 cases; week ending October 13th, yellow fever, 1 case; week ending October 19th, yellow fever, 1 case.

"At Ponce there has been a good deal of small-pox—not officially reported."

Havana.—Four hundred and sixty-eight deaths were registered during the month of October, 1888, including yellow fever, 48; enteric fever, 9; pernicious fever, 19.

Eighteen of the deaths from yellow fever occurred in the military hospital.

The sanitary inspector, Dr. D. M. Burgess, states that—

Two or three American vessels have had the misfortune, after entering the port and anchoring in the bay, to become surrounded by infected vessels, fresh in their pollution after discharging at infected wharves for many days, and have consequently been invaded by yellow fever. Conspicuously the ship Portland Lloyds and bark Nereid.

Small-pox, which for over fifteen months reigned here in an active epidemic form, seems to have nearly or quite disappeared for the present from Havana, its suburbs, and the province of that name, as there has not been a death from it for the last fifty days or more; however, in some of the outlying towns, as Matanzas, Guines, and Manzanillo, it still exists.

The weather still continues hot, and no decided "norther" has refreshed us as yet this season.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.
Glasgow.....	Oct. 20.	545,678	215	..	..	..	..	5	6	3	..
Warsaw.....	Oct. 13.	444,814	259	..	..	8	..	..	15	10	..
Calcutta.....	Sept. 15.	493,219	174	..	..	2	..	..	..	3	..
Amsterdam.....	Oct. 20.	389,916	143	..	..	..	..	3	..	3	..
Rome.....	Sept. 1.	300,467	139	..	..	..	..	3	..	1	..
Rome.....	Sept. 8.	300,467	149	..	..	..	..	8	1	1	..
Munich.....	Oct. 6.	275,000	168	..	..	..	..	..	3	4	..
Munich.....	Oct. 13.	275,000	154	..	..	..	..	1	3	4	..
Belfast.....	Oct. 20.	227,032	97	..	..	2	4	2	..	..	..
Bristol.....	Oct. 20.	226,510	82	..	..	..	1	1	..	..	..
Trieste.....	Oct. 13.	154,500	62	..	..	..	..	..	..	3	..
Toronto.....	Oct. 27.	130,000	28	..	..	..	..	..	1	2	..
Stuttgart.....	Oct. 20.	125,510	34	..	..	..	..	..	1	1	..
Bremen.....	Oct. 13.	122,000	40	..	..	..	..	..	..	1	..
Havre.....	Oct. 13.	112,074	80	..	..	2	11	..	..	..	..
Mayence.....	Oct. 13.	65,892	27	..	..	..	..	..	2	..	..
Curaçoa.....	Oct. 13.	25,000	5	..	..	..	..	..	..	..	..
Vera Cruz.....	Oct. 25.	23,800	24	..	..	2	..	..	..	..	..
Gibraltar.....	Oct. 14.	23,631	13	..	..	..	..	..	..	..	..

UNITED STATES.

San Francisco, Cal.—The secretary of the Board of Health reports eight cases of small-pox for the week ending October 26, 1888. Six of these cases were discovered in the city and county hospital. The patients were immediately removed to the small-pox hospital, the ward vacated and fumigated, and the inmates vaccinated.

Tampa, Fla.—Dr. J. P. Wall, president Board of Health, reported under date of October 31, 1888, as follows: "For the week ending to-day there have been about 12 new cases of the fever, generally of a mild type. Seven of these cases I have seen, and the other 5 I know of from hearsay, but have little doubt of their character. No deaths. The patient with the parotid abscess is recovering, though not able to leave bed yet, four weeks from beginning of illness."

"Plant City continues free from fever, though the cordon had better be continued for a while longer. No yellow fever in the county outside of Tampa."

Uptonville, Ga.—Surgeon W. H. H. Hutton reported under date of October 27th as follows:

I telegraphed you this morning relative to a case of fever at Uptonville, Ga. This place is 12 miles north on the S. F. & W. R. R.

On one of my trips from Waycross to Camp Perry, just previous to assuming charge, about September 5th or 6th, I found Mr. Upton on the train bound for Jacksonville, and ascertained that he had been into and out of Jacksonville several times.

I called the attention of the conductor that he was prohibited from bringing passengers from Jacksonville. The conductor said Upton had a special pass. I told him to take Upton to Jacksonville, and if he allowed any more passengers on his train from Jacksonville I would report him; I then saw Upton, who said his business required him to go to Jacksonville; he cared nothing for yellow fever, etc., whereupon I told him to go on to Jacksonville, and if found on the road again he would be arrested. He said he would go out to Baldwin.

Nothing more was heard of him till the 24th, when, as I was on my way from Palatka to Camp, and by missing connection was obliged to go to Waycross and return, I heard that Upton was sick at Uptonville. That evening I sent Dr. Guitéras and Dr. Posey on the Government train to see him.

They found Upton had returned to Uptonville from Baldwin in a buggy on the 22d. He had no fever. Next morning they again visited him, and while he had no fever, he presented every indication of convalescence from yellow fever, and as a precaution against the spread of the disease brought him to Camp, where the diagnosis was confirmed. This morning Dr. Guitéras again went to Uptonville, and found Mr. Simmons, who lives about sixty feet from Mr. Upton, sick, and brought him to Camp also. Both Mr. Upton's and Simmons's houses have been fumigated; trains are not allowed to stop at that point, and every precaution will be taken to control the disease.

If any further developments take place I will depopulate the place and bring such as can not do otherwise to Camp; which we did with Callahan, which measures have so far aborted the disease at that point.

Punta Gorda, Fla.—Dr. J. F. Hartigan, Sanitary Inspector, reported under date of October 31st as follows:

Punta Gorda, De Soto County, the terminus of Florida Southern Railway, is 250 miles south of Jacksonville. It is situated on a projection of land at the junction of Charlotte Harbor Bay with Peace River, and was incorporated December 3, 1887. As laid out on the map, it is four miles square. The soil is a sandy loam. Population, 200. Fishing, main industry. The town gradually slopes from the bay, rising about eight feet in a mile; where necessary, ditching is resorted to for drainage.

There is no history of dengue or yellow fever; malarial fever is sometimes seen, but it is easily amenable to treatment. Ordinances exist against nuisances of all kinds, and, although a small community, rigid quarantine has been maintained all summer.

The sentiment of the citizens of the place, on account of its exposed situation, is that a quarantine station be established at Boca Grande Pass, and at Punta Rossa; also that there should be a general patrol of the coast for the purpose of protecting them against the introduction of yellow fever, and to prevent smuggling. All boats coming up the bay, they suggest, should be quarantined the usual time, and be provided with a certificate of health from the proper officer. This would create a feeling of security, and tend to invite business and population at this desirable health resort and important situation.

Cistern water is the principal supply. A small number of the inhabitants use surface wells. An artesian well with sulphur taste and odor belongs to the hotel; its depth is about 400 feet. The sewer-pipe connected, however, is not of the best construction, nor is it carried out sufficiently into the bay to insure against evil consequences.

The water-closets of the town are constructed generally as follows: Under the opening the closet is supplied with a tray lined with tin or zinc raised from the ground, and having perforations for the urine to pass into the sand below; letting the urine escape in this way, it is

claimed, renders the odor less unpleasant. According to an ordinance, the solid matter is required to be removed outside the corporate limits every four days, and in a large measure it is converted into a fertilizer. There is no cemetery.

Mayor, W. H. Simmons; physician, Dr. W. H. Burland.

Port Huron, Mich.—Dr. Farnum telegraphs as follows:

November 3, 1888: "I have made investigation of small-pox in Sarnia, Canada; 3 cases; perfectly isolated; strict quarantine. No danger of contagion."

Jacksonville, Fla.—Dr. Joseph Y. Porter telegraphs as follows:

November 1st: "New cases, 56; deaths, 2; total cases, 4,210; deaths, 356. Patients, St. Luke's, 11; Sand Hills, 4."

November 2: "New cases, 28; deaths, 3; total cases reported, 4,238; deaths, 359. Patients, St. Luke's, 9; Sand Hills, 2."

November 3d: "New cases, 25; deaths, 2; total cases, 4,263; deaths, 361. Patients, St. Luke's, 9; Sand Hills, 2."

November 4th: "New cases, 11; deaths, 3; total cases, 4,274; deaths, 364. Patients, St. Luke's, 10; Sand Hills, 2."

November 5th: "New cases, 39; deaths, 2; total cases, 4,313; deaths, 366. Patients, St. Luke's, 12; Sand Hills, 2."

November 6th: "New cases, 42; deaths, 1; total cases, 4,355; deaths, 367. Patients, St. Luke's, 10; Sand Hills, 2."

November 7th: "New cases, 34; deaths, 3; total cases, 4,389; deaths, 370. Patients, St. Luke's, 12; Sand Hills, 2."

November 8th: "New cases, 25; deaths, 3; total cases, 4,414; deaths, 373. Patients, St. Luke's, 14; Sand Hills, 2."

November 9th: "New cases, 20; deaths, 6; total cases, 4,434; deaths, 379. Patients, St. Luke's, 14; Sand Hills, 2."

Camp Perry, Fla.—Surgeon W. H. H. Hutton telegraphs as follows:

November 2d: "Morning report. Present: Officers, 4; guards, 11; employees, 40; refugees arrived, 3; discharged, 11; died, 1; remaining, 124."

November 3d: "Morning report. Present: Officers, 4; guards, 11; employees, 39; refugees arrived, 2; discharged, 9; remaining, 117. Fever camp, 4.

November 4th: "Morning report. Present: Officers, 4; guards, 11; employees, 39; refugees arrived, 12; discharged, 8; remaining, 121. Fever camp, 4—3 convalescent and 1 critical."

November 5th: "Morning report. Present: Officers, 5; guards, 11; employees, 33; refugees arrived, 1; discharged, 37; remaining, 85. Fever camp, 3."

November 6th: "Morning report. Present: Officers, 5; guards, 11; employees, 32; refugees arrived, 12; discharged, 11; died, 1; remaining, 85. Mrs. Simmons, from Uptonville, died. Fever camp, none. Conductor Hubbard has the fever this morning."

November 7th: "Morning report. Present: Officers, 5; guards, 11; employees, 31; refugees arrived, 7; discharged, 26; remaining, 66. Fever camp, 1—Hubbard, who is doing well."

November 8th: "Morning report. Present: Officers, 5; guards, 11; employees, 30; refugees arrived, 10; discharged, 2; remaining, 74. Fever camp, 1."

Gainesville, Fla.—Assistant Surgeon Martin telegraphs as follows:

November 2d: "Three colored and one white, new cases."

November 3d: "One death, J. M. Graham, should have been included in yesterday's report."

November 4th: "Three new cases, colored."

November 5th: "Six new cases, two colored and four whites. Sixteen colored and seven whites under treatment."

November 6th: "Two new cases, one death."

November 7th: "Two new cases, colored."

November 8th: "Three white and three colored, new cases."

November 9th: "One new case, one death."

Enterprise, Fla.—Dr. J. F. Hartigan telegraphs as follows:

November 2d: "Two new cases. All others doing well. Disease apparently under control."

November 3d: "No new cases. All others convalescing and well. Made two autopsies."

Live Oak, Fla.—Passed Assistant Surgeon Urquhart telegraphs as follows:

November 1st: "Dr. Hankins reports two suspicious cases this morning."

November 2d: "Dr. Hankins reports 4 cases here."

Assistant Surgeon Geddings telegraphs as follows:

November 6th: "Arrived here to-day. Total number cases to date, 7; 1 death; 1 case under treatment, very sick. Town almost depopulated and in bad sanitary condition."

November 8th: "No new cases. Last case eight days old, and progressing favorably. Am having town cleaned and disinfected."

Palmetto, Fla.—M. B. Harrison telegraphs as follows:

November 6th: "For week ending 5 p. m., Monday, November 5th, at Palmetto, Fla., there were two new cases of yellow fever; deaths, 1. Total number cases to date, 84; total number deaths to date, 9."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—									
				Children.	Yellow fever.	Small-pox.	Variola.	Typhus fever.	Eutetic fever.	Sanitary fever.	Diphtheria.	Measles.	Whooping-cough.
New York, N. Y....	Nov. 3.	1,541,652	630	..	..	..	..	6	21	39	7	8	..
Philadelphia, Pa....	Oct. 27.	1,016,758	336	..	..	..	..	11	8	7	..	..	..
Chicago, Ill....	Nov. 3.	800,000	231	..	..	..	..	12	6	21	..	..	..
St. Louis, Mo....	Oct. 30.	440,000	150	..	..	..	..	3	1	7	..	1	..
Baltimore, Md....	Nov. 3.	431,879	152	..	..	..	..	4	..	5	..	2	..
Boston, Mass....	Nov. 3.	415,000	182	..	..	..	..	8	..	..	..	..	..
San Francisco, Cal....	Oct. 26.	330,000	107	..	..	..	..	1	1	2	..	..	..
New Orleans, La....	Oct. 27.	248,000	14	..	..	..	..	..	..	10	..	..	..
Detroit, Mich....	Oct. 27.	220,000	62	..	..	..	..	4	..	1	2	..	1
Louisville, Ky....	Nov. 3.	200,000	44	..	..	..	..	3	..	..	..	..	..
Milwaukee, Wis....	Nov. 3.	195,000	37	..	..	..	..	..	..	1	..	..	..
Kansas City, Mo....	Nov. 3.	180,000	35	..	..	..	..	4	..	2	..	..	..
Minneapolis, Minn....	Oct. 27.	180,000	47	..	..	..	..	9	1	6	..	..	..
St. Paul, Minn....	Oct. 27.	175,000	47	..	..	..	..	6	..	6	..	..	..
Newark, N. J....	Oct. 30.	174,954	80	..	..	..	..	4	..	10	..	1	..
Rochester, N. Y....	Nov. 3.	120,000	30	..	..	..	..	1	..	1	..	..	..
Richmond, Va....	Oct. 29.	100,000	36	..	..	..	..	3	..	..	..	..	..
Denver, Col....	Nov. 2.	96,000	39	..	..	..	..	6	1	..	..	..	..
Columbus, Ohio....	Nov. 3.	93,000	26	..	..	..	..	2	..	1	..	..	..
Toledo, Ohio....	Nov. 2.	80,000	17	..	..	..	..	1	..	..	..	..	..
Nashville, Tenn....	Nov. 3.	65,153	19	..	..	..	..	1	..	..	..	..	..
Fall River, Mass....	Nov. 3.	65,000	27	..	..	..	..	..	1	..	1	..	..
Charleston, S. C....	Oct. 27.	60,145	35	..	..	..	..	1	..	1	1	..	..
Evansville, Ind....	Nov. 3.	53,000	7	..	..	..	..	2	..	..	..	..	..
Manchester, N. H....	Oct. 27.	41,000	17	..	..	..	..	..	..	1	..	..	..
Galveston, Texas....	Oct. 26.	40,000	12	..	..	..	..	..	..	..	..	..	..
Mobile, Ala....	Nov. 3.	40,000	14	..	..	..	..	..	..	..	..	..	..
Portland, Me....	Nov. 3.	40,000	11	..	..	..	..	..	..	..	..	..	..
E. Saginaw, Mich....	Nov. 3.	33,000	4	..	..	..	..	..	..	..	..	..	..
Burlington, Ia....	Oct. 31.	30,166	4	..	..	..	..	..	..	..	..	..	..
Davenport, Ia....	Oct. 27.	30,084	9	..	..	..	..	..	..	5	..	..	..
New Albany, Ind....	Nov. 3.	30,000	5	..	..	..	..	..	..	..	..	..	..
Altoona, Pa....	Oct. 27.	29,546	4	..	..	..	..	..	..	1	..	..	..
New Bedford, Mass....	Nov. 3.	26,845	9	..	..	..	..	..	..	2	..	..	..
Haverhill, Mass....	Nov. 3.	25,000	6	..	..	..	..	..	..	..	..	..	..
Jackson, Mich....	Nov. 3.	22,500	2	..	..	..	..	..	..	..	..	..	..
Newton, Mass....	Nov. 3.	21,105	7	..	..	..	..	2	..	..	..	..	..
Newport, R. I....	Nov. 1.	20,466	1	..	..	..	..	..	..	..	..	..	..

THERAPEUTICAL NOTES.

Antipyrene as a Uterine Sedative.—Windelschmid ("Allg. med. Ctrl.-Ztg."; "Union méd.") prescribes enemata of thirty grains of antipyrene before or during menstruation in cases of dysmenorrhœa. In two obstinate cases he has known this treatment to prove particularly satisfactory, three doses being given (at intervals of twelve hours between the first and second, and of twenty-four hours between the second and third). He notes profuse sweating and slight ischuria as among the inconveniences of the method, and adds that it has sometimes been necessary to give a glass of wine or milk to avert imminent collapse. Rivière ("Gaz. hebdom. des. sci. méd. de Bordeaux"; "Union méd.") has found the same drug very efficient in allaying after-pains, in doses of fifteen grains by the mouth. A single dose proved enough in twelve out of twenty-eight cases, and two doses, at an hour's interval, in twenty out of thirty-eight cases. When it fails, he says, retention of placental débris or the like is to be suspected. He states that the drug is not eliminated by the milk.

Iodide of Potassium in Broncho-pneumonia.—Zinis, of Athens ("Bull. gén. de thérap."; "Arch. f. Kinderheilk."), recommends the administration of from seven to twenty grains of iodide of potassium daily in cases of broncho-pneumonia in strong children over five years old in whom the disease occurs otherwise than as an accompaniment of measles or whooping-cough. If it does not prove efficient within the first two or three days, he says, the treatment should not be continued.

Parenchymatous Injections of Carbolic Acid in Angina Ludovici have been employed in seven cases by Skibnewsjki ("Med. Obsc."; "Ctbl. f. Chir."), a solution of from two to three per cent. being injected four or five times a day, and the swelling treated by massage for ten minutes after each injection. In every instance the inflammation subsided speedily and the patient made a rapid recovery.

Oil of Turpentine in the Treatment of Epistaxis.—Ernyi ("Pester med.-chir. Presse"; "Ctbl. f. klin. Med.") recommends tamponing the nasal passages with oil of turpentine, having found it efficacious in three cases in which other measures had failed. The only objection to it, he says, is its irritant effect on the mucous membrane.

ANSWERS TO CORRESPONDENTS.

No. 238.—He must deposit with the county clerk a copy of his diploma, paying that officer a fee of ten cents.

No. 239.—We do not know that the term has ever been applied to other ligatures than those made of rubber, but it might properly be given to a form of ligature that has been used in cases of varicocele, the source of the elasticity being a piece of whalebone. Rubber ligatures are to be had of the instrument-makers.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Lectures and Addresses.

THE MEANS OF EFFECTING THE UNITY OF THE MEDICAL PROFESSION.

BEING A PORTION OF THE ANNIVERSARY DISCOURSE
DELIVERED BEFORE THE NEW YORK ACADEMY OF MEDICINE,
Thursday Evening, November 15, 1888.

By D. B. ST. JOHN ROOSA, M.D., LL.D.

[AFTER a brief sketch of the Academy's career and a statement of the circumstances that had led to the present unsatisfactory status of the medical profession of the State of New York as a body in the esteem of the public, the speaker proceeded as follows:]

It is of unity of a higher, or rather of a broader, character than that between specialism and general medicine that I would now speak. It is of a unity once existing, which allows all those who in any way by their work in life, in studying either the structure of the human frame or the causation and nature of disease, are contributing to the mitigation or cure of physical suffering, to unite as members of the medical profession under the common name of physicians. In discussing the means for securing this unity, I shall consider only this State of New York. In studying its medical history and reasoning from it, I think we may find ample ground for the subject of this evening.

Although we may justly complain that we do not now possess the power that comes from union, and that we are thus made inferior to the profession in other countries, there is one advantage that we enjoy in America. Social position the American doctor may have. If he does not, it is clearly a fault of his own, for our American system confers no degrees of nobility except such as are the spontaneous gift of the people. The exceptions to this rule are not numerous. Sometimes great riches give undue and unmerited prominence in society; but even in this case, unless the money is honestly earned or worthily inherited and used with liberality and friendliness to those less fortunate, riches confer no permanent prominence in any respectable circle in this country. The American doctor, like any other American citizen, however humble his origin, may enter any circle, where his abilities and character give him the right, as an equal.

The situation in some other countries is painfully different, and notably so in England, which in so many respects represents the highest type of our civilization, and yet where sometimes the stamp of the guinea is not on pure gold. A younger son of an English peer became enamored of medicine, and, pursuing his studies, obtained a qualification to practice. His family insisted that he must not practice in England, on the ground that an occupation of that kind was beneath his rank; but they consented that he should pursue his profession in a neighboring capital. Successful there, he enjoyed a large practice. But it was observed that his assistant always attended the family of his country's legation, and that he never personally prescribed for any of them. He himself gave as a reason for this, to an American medical friend, that were he to do so he would so lower his social position that he could not be invited to

dine with his exalted countrymen. Were it necessary, incidents known to many of us could be told to corroborate the truth of this particular narration, which would illustrate the correctness of this view of the social position of a doctor in medicine in England. Many of us have heard a distinguished English surgeon express his surprise at the high position taken by American physicians in the society of their own country. It is certainly true that a practitioner of medicine in England, unless under exceptional circumstances, when the disability is in part removed by knighthood, does not rank as what they are pleased to call a gentleman. He even ranks below the lawyers, and meekly takes up the position assigned to him, and, like the rest of the commonalty of that country, dearly loves a lord. Yet the position of the profession in England, on a scientific basis, is one of the most honored in the world. Many believe that, on the whole, it best represents the rank of our profession in the world, both by the reputation of its present members for scientific attainment and by its illustrious history. My object in this allusion is simply to show that there exists no obstacle in our country that can prevent us from securing any position as a body that our merits will justify. There are no lines of caste here that prevent us from obtaining all our rights and privileges as a learned and philanthropic body. But, as things are now, it becomes evident upon the most casual observation, and it has been repeatedly shown, that the medical profession as a body has no sufficient power or influence in many matters which should be absolutely under their control as in war campaigns, once entered upon, are under the direction of the commanding general. Only experts run engines by land or by sea. Bank presidents are not made of men unlearned in finance. Only scholars are professors of Latin or Greek. And yet private and public sanitary affairs, the prevention of epidemics, the government of hospitals are very often directed, in whole or in part, by men of very good business, military, or mechanical training, but with no knowledge of medical matters, but sometimes with professed skill in dealing with a recalcitrant and impracticable medical man. Boards of education, boards of health, sanitary legislation, are often conducted with but a feeble representation of medical men. When a doctor is appointed to a strictly medical position, requiring the highest type of medical learning and skill and experience, it is often because he is a man of attainments of a high order in petty politics, while his medical qualities are correspondingly low. This condition of things obtains because the people as a whole actually believe that the profession, as a profession, knows but little, if any, more about general sanitary matters or medical legislation than a level-headed and successful banker or railroad man or a scientific plumber. We are divided into so many parties, each crying its shibboleth, that the public at large have at last come to think that, however skilled a doctor may be in the management of a sick person or the direction of affairs in a house threatened or invaded by disease, he needs a good deal of lay oversight and repression when he assists in the management of matters pertaining to public hygiene or health. Fortunately, the United States army

and navy have been trained to think differently; and, from reasons which may be easily explained in a later stage of this discussion, no such opinions are held there.

For this state of things I, for one, have no fault to find with the sovereign people. Neither am I bringing any accusation against the press of our country—a power that does so much in leading public opinion. It is generally on our side in any matter where we represent the best interests of the country. The blame should fall in part upon the rapidly changing condition of things in our country, and in part upon ourselves. The fact is, that we have for some years demanded very little more of the State than that we should be let alone. We have not until lately asked to have our laboratories or colleges endowed, even by individuals. We have assumed that our colleges are private institutions, in which no one but the students who attended them and the professors who owned them were at all interested. More than all, we have acquiesced in the taking away from us of privileges which formerly were conceded to us.

This brings me to the kernel of what I have to say. Our lack of unity depends not upon any want of social position, nor upon the estimate of us that the public have voluntarily assumed, but one that our own bickerings and quarrels have forced them to take. For many years the profession in this State has been practically detached from the governing power. It has submitted to this, and, instead of forming a part of the political commonwealth, it has chosen another way—one which has produced, and is producing, a pernicious state of things, harmful not only to the unity and honor of the profession which this Academy represents, but, what is far more important, to the community whom it serves.

Any one who can get a degree from a rigid or a lax medical school, or who can get a diploma, which he has brought from some other county or State, indorsed by a college here, is allowed to practice medicine. In the earlier days we had censors chosen by the profession, who controlled the examination, and there was at least one standard made by independent men. These censors acted through the county societies or the three or four medical colleges of the State. To this system, but with much larger liberty of opinion, with absolute freedom of action in therapeutics and theories of the action of remedies, we must return. The State must concern itself, through its properly chosen agents, to know that those who are licensed to practice medicine shall know both the structure and action of the different parts of the human body, the methods for saving life and restoring functions by surgical operations, and the antidotes for active poisons. It must ascertain that those whom it allows to prescribe for the sick have availed themselves of opportunities for studying disease. Beyond this, the State may certainly allow complete freedom. There are those who look forward to a day when the standard shall be much higher than this. They lay great stress upon what is called an academic education, such as is indicated by having a degree of bachelor of arts from an American college. With this view I have no sympathy. Whether or not the college system of our country needs great modification for those who study theology or law, or who become journal-

ists, may be an open question. But the present system, even when modified by elective courses, is not fitted for future doctors in medicine. It is a great waste of time, in my opinion, to cause a young man who proposes to study medicine to spend four years in an undergraduate college in the studies in which the ordinary college student is engaged. Two years, bringing the student up to the junior year, are important and sufficient for him. Then his university life should begin. Some day our colleges, instead of expanding into so-called universities, will take what are only apparently backward steps and become colleges, and let their young men out with two years less of Greek and Latin and then send them to real universities. The alumni and professors in undergraduate colleges are still as a body unprepared to accept this view. They consider those who hold it as enemies of sound learning. But finally President Barnard will have many followers. Our small college will become like the German gymnasia carrying a student through the essential part of classical training and mathematics, while the great colleges like Columbia, Princeton, Yale, and Harvard will be universities, where young men may enter directly upon professional and post-graduate studies. Students now enter our colleges too late and stay too long, if the profession of medicine is their goal. Until these reforms are brought, those who wish to study medicine should either enter scientific schools as soon as their preparatory studies are over, or leave the colleges as now constituted at the end of the second year. But this is an incidental subject, for the introduction of which I almost beg your pardon.

But what is the remedy for the present diseased condition of our profession in this State? This remedy is to be found in making a common standard for the license to practice medicine—not a common standard for the degree of doctor in medicine. That should be conferred, as now, by each college according to its own ideas as to what constitutes a sufficient education for the honor. But the liberty to practice medicine should no longer be left in the hands of bodies, however respectable and however distinguished, which are actually only responsible to themselves. During the past few years, after a most thorough discussion, carried through several sessions, the principle of this statement has twice in succession been unanimously approved by the oldest medical society of this State. The last president of this society, Dr. Loomis, in his inaugural address, advised the Committee on Legislation to urge the passage of a law for a State board of examiners on the late Legislature, and, if unsuccessful, upon succeeding Legislatures “until it shall become law of the State.” Only lately the member of the bar who of all others* has given by far the most attention to medical legislation has announced himself in an address as an advocate of such an examining board. There is only a single authority on medical education in our State who, so far as I know, openly opposes such a law. Dr. Austin Flint says on this subject: “State medical boards, appointed to determine by actual examination the qualifications of ap-

* W. A. Purrington.

plicants for license to practice medicine, can never be of any great practical benefit so long as it is deemed necessary to recognize in their organization certain so-called systems of practice, such as homœopathy and eclecticism.*

There are homœopaths and eclectics in Canada and in Virginia and Alabama, where such a system as the State Society of New York advocates is in full action, and yet no practical difficulty, but the greatest benefit, has been found in the operation of the law. There is no longer any opposition to the system on the part of our profession in our State, but the proposed law gets no further in the Legislature than to be sent to a committee, when a dispute occurs as to the ratio of representation on this proposed board, or some other minor point. This discussion gives our law-makers an opportunity, of which they are not slow to avail themselves, to lay the whole subject on the table until the doctors can agree.

In the course of some remarks upon this subject in the State society some years ago, the president of this Academy predicted that the people themselves would some day demand the establishment of such a system, and then we should have it. It is with a view of informing some of the influential and conscientious members of the community in this State as to the needs of the profession, and through them the public, on this subject that this discourse has been written. Not many years since the people demanded that the privilege of entering the legal profession directly from a law school, without an examination by the courts, should be abolished, and it was abolished. The law schools of the State are only two in number, they are irreproachable in reputation, and no glaring improprieties, perhaps none at all, existed in their management. But the legal profession, and through them the public at large, grew jealous of any liberty to enter the profession other than that granted by an examination by an independent board constituted by the court. This kind of an examination the professors of a law school, however ably conducted, however endowed by individuals or corporations, could not furnish. As I have already said, in the State of New York, if a man or woman receives a degree of doctor in medicine in one of the regular chartered medical colleges of the State, he or she may practice medicine here without further leave or license. Those who come from other countries and other States must have a diploma from some regularly chartered college, and this must be indorsed by one of the colleges of this State. The number of men who acquired the right to practice medicine as they may by passing the examination of the Regents of the University and by license from the censors of County Medical Societies is so small that they may be left entirely out of consideration.

It is thus seen that the colleges, and one college equally with another, has the power of determining who shall practice medicine. The standard of attainment required by these various colleges in this State varies exceedingly. Not one of them, moreover, separates the matter of granting degrees entirely from the instruction. With this I have no quarrel. Those who have instructed the men are, on the

whole, altogether the most suitable persons to determine their qualifications for a degree. But after they have determined this to their satisfaction and conferred the degree, the State should step in and say: "In behalf of the people, we will now decide whether the possession of this degree gives you the general knowledge required by the standard which the State thinks requisite for a license to practice. If the army and navy, if the hospitals, will not accept the fact of the possession of degree as sufficient, neither will we." Certainly the physical welfare of the men and women and children of the State requires as much supervision and solicitude as that of the soldiers and sailors and the inmates of hospitals. These medical colleges of this State, as everybody knows, are, for the greater part, of the most respectable kind. The education that may be obtained in them is of the highest quality. The ablest men in the profession are in the faculties. Until within a few years an excessively large proportion of the scientific work of the profession—work that is always of ultimate value to the patient—was done by the professors and instructors in these institutions. The well-substantiated renown of American medicine—a renown that causes its literature to be translated into every civilized tongue, and its great workers to be everywhere recognized—is to be ascribed to these colleges. Even now, when professional activity is much more widely diffused and better organized outside of the colleges that grant the degree of M. D. than ever before, these institutions continue to do their work as well or better than ever; and yet but very few large hospitals will give one of their graduates an opportunity to practice in them, even in a subordinate way, without first subjecting him to a more or less rigorous examination, conducted by the medical officers of the hospitals. I have known one instance at least when three candidates for one vacancy were rejected, and the hospital sent out for other candidates. Not one of these young graduates is allowed to practice among the soldiers of the United States army, or the sailors of the United States navy, until he has passed another examination by the medical officers of the army and navy; and, as a matter of fact, a large proportion of those who attempt to pass this latter examination are found incapable.

Yet the State of New York gives this doctor in medicine the right to practice without further question. It says, by inference, "although many of you are not qualified to enter a civil hospital and treat the patients there, even when your work is carefully supervised by men of experience; although very many of you are not fit to have the care of sick or wounded soldiers or sailors, yet all of you may go wherever you can find an opportunity in our borders without any independent supervision." It is willingly conceded that in some departments of medical practice no such high grade of qualifications is required as should be among the picked medical officers of the army or navy. But investigation shows that these graduates of medical colleges are not rejected by army and navy medical boards because they are deficient in the highest departments and the non-essentials of medical knowledge, but because they do not know the antidotes for poisons, because they do not

* "College and Clinical Record," May and June, 1888.

know how to set a broken arm or leg, how to tie an artery or dress a wound, how to rescue a person from drowning—above all, how to recognize a common disease. Certainly the State should restrain mad dogs from running at large and regulate the storage of gunpowder. The State may certainly not concern itself to know whether a doctor knows the French language or the fundamentals of geology; but it should know whether a licensed practitioner can really practice whatever would be everywhere conceded as the essentials of his art. Such a board would not create a revolution. But it would do something to protect the community from the dangers of ignorance in the essentials of the practice of medicine on the part of those who assume to take care of their health. As things are now, most of those who receive the degree of M. D. would easily pass the State examination. But a dangerous few would be thrown out. Such a system once established, and sects in medicine would soon be practically destroyed. There would be a common standard of fitness based upon a knowledge of the structure of the body and the recognition of disease. Differences in the modes of treatment might safely be left to themselves were we once assured that all practitioners were qualified in essentials. One of the medical orators and a vice-president of this Academy, Dr. W. H. Draper, at the opening of the new College of Physicians and Surgeons, lately said: "It is a melancholy but indubitable fact that the standard of medical education in this country is far below that of England and the Continent of Europe."

I do not believe that this lowering of the standard of what may be called the general average of medical attainment in this country is due to the fact that many of our doctors—more than half of them—are not alumni of undergraduate colleges, and deficient in Latin and Greek, but because many of the medical colleges have not sufficiently instructed them in anatomy and physiology, in medicine and surgery, and in good habits of observation. It is not altogether in the preliminary but also in the professional training that care has not been taken—and great defects have occurred. The terms have been too short, and in many instances the degrees have been too readily granted. I am not aware of a civilized country but our own where irresponsible medical schools are allowed to determine the right to practice medicine. It is to this condition of things that they owe their general superiority to us in the qualification of the average doctor in medicine. When a medical congress meets in Amsterdam, or Copenhagen, or Brussels, there is no difficulty in the enrollment of physicians. If a man has a qualification, he is enrolled. But when one meets in Philadelphia or Washington, how different! A great many things must be inquired into, until assurance is had that the degree represents what it assumes to. Where is the college that grants it? How long is its course? Are its candidates properly examined? In short, to say that a man possesses a degree from a regularly incorporated college in this country by no means determines that he is deemed a fit associate in a learned body devoted to the consideration of medical subjects. It is true that considerations of belief in so-called dogmas are sometimes made

grounds for exclusion here; but the fact remains that the American standard is far from being uniform, and is generally too low, and that for this reason much more and closer scrutiny of what is technically called a medical qualification must be made here than in a European state. It conveys no such assurance when found in the hands of a medical man in this country as it does abroad that we are dealing with a reasonably well-informed doctor in medicine. Now that it has been practically settled by the voice of the profession that they desire the protection of the community by a change in our laws—such a change as will cause all who in future desire to practice medicine in our State to pass a common examination and come up to a common standard—I have taken the opportunity afforded me by the invitation to this discourse, which is, by a by-law of the society, devoted to the laity as well as to my brethren, to attempt to influence the public at large to unite with us in securing a law constituting a board of examiners for the license to practice medicine. I believe, with our president, that without your sympathetic and active co-operation the accomplishment of such a reform will be impossible. But when you see your way clear to demand it of our legislators they will comply, and that speedily.

Such a law will in time effect the unity of the medical profession, and greatly increase its beneficent power. This latter effect is certainly desired by every citizen. If it can be demonstrated to you that under a new system of admission to the practice of medicine increased confidence in the average medical adviser will arise, and that you will be actually safer in limb and health, no further argument will be needed. To those who believe in gifts of healing in the nineteenth century, and in the power of the seventh son of the seventh son, no argument can be effectual. But to those who believe that the possession of a certain number of the facts in what is called medicine is a necessary prerequisite to a right to practice, that a man should know the anatomy of the human stomach, for example, before he puts drugs into it, the situation of a blood-vessel before he tries to tie it, that he shall be able to distinguish pneumonia from peritonitis, I confidently appeal for a law that shall allow no one to practice until a proper and independent authority has determined that such facts have been learned by the candidate.

As I have intimated, as a minor but not unimportant consideration, such a law will break up the odious scandal that has so long been so abhorrent to many outside of our profession, of so-called different schools in the treatment and care of the sick, standing apart from each other, or retreating in the face of a common enemy. Let us educate all medical men up to a common standard, and then all difficulties in the way of relations with each other over the patient will vanish. This proposed law will also cause a more general interest in seeing that the proper facilities for the study of medicine are amply furnished. Our colleges, our laboratories, our centers of instruction will become not isolated, but general objects for private benevolence and philanthropy. There is really no subject in which the community at large has a more vital interest than the quality of its medical men. Every one, except an occasional railer at

our impotence, who mourns that we can not compass the infinite and cause men and women to avoid the awful but irrevocable truth, "What a man soweth, that shall he also reap," realizes that physicians are important as individuals to the general public, but it is for our recognition as a great factor in the various parts that make up the edifice that we call the State that I plead. Through such a recognition, with its accompanying supervision, although not in the absolute and paternal way of un-republican, or rather of unconstitutionally governed, countries, your safety and care as individuals will be better assured.

In one of the first months of the War of the Great Rebellion a squadron of United States cavalry was galloping at night through the lanes of northern Virginia. A young medical officer rode beside the captain in command. Suddenly, as evidence of a hostile force in ambush came to the trained eye or ear of the officer in command, a man whose experience had been long among the Indians of the frontier, there was the order, "Halt!" After some hurried direction to the orderly sergeant, he concluded: "Put the doctor in the center; we may need him." So I ask you, while the physician shares with you the perils and vicissitudes of life, care for him and his class, put them in the center, safe from needless injury and unwarranted peril, and where they may, to their capacity and in the proper time, help to maintain and preserve the commonwealth.

Original Communications.

CEREBRAL ABSCESS

AS A SEQUEL OF COMPOUND FRACTURE OF THE SKULL.*

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ON the 5th of December, 1887, I was asked by Dr. Oswald Joërg to see a boy of six who had been injured five weeks previously, and obtained the following history:

While crossing a railway, he had been struck by the locomotive, and picked up unconscious. He lay in this condition for a few hours and was then seen by his physician, who found a depressed compound fracture of the right temporal bone, involving the adjacent portions of the sphenoid and parietal bones, and extending in the latter up to the temporal ridge. Another fracture, without depression, was located in the mastoid portion of the parietal. The tip of the ear had been cut smoothly off, and a large flap of skin, which had been lifted up, allowed easy access to the bony surfaces beneath.

Several fragments of bone were removed, but, as the boy had recovered his consciousness, the larger fragments were left undisturbed, the wound thoroughly irrigated with the mercuric bichloride, and a gauze dressing with iodoform applied, the flaps having been previously united with catgut sutures and a rubber drain introduced. On the third day the sutures were removed, as the boy was delirious and a severe headache had developed. The temperature was 104° F. and the pulse 144. Respiration 32. No vomiting. The wound was found to be suppurating freely,

and the symptoms subsided rapidly. On the following day, November 1st, the temperature had dropped to 99.5°, and the boy was perfectly conscious.

Two more fragments of bone were removed November 3d, and from this time on the boy remained perfectly well with the exception of a high pulse-rate, which ranged from 100 to 144. There was no vomiting or headache and the temperature was normal. The wound healed, with the exception of a slight fistula over the anterior fracture.

December 3d.—The thirty-seventh day after the injury the patient was seized in the night with severe convulsions limited to the left arm and leg, intense headache on the injured side, and high fever. His mind remained unaffected, however, except during the convulsive seizures or for a few hours after.

5th.—Two days after this I saw him, and, detecting dead bone through the fistulous tract, urged his removal to a hospital with the view of exploring for suspected abscess. This, however, his family would not consent to, and for the next week he had no symptoms but occasional flurries of high temperature and a continuously rapid pulse.

13th.—He was seized with rigors and convulsions, for the first time accompanied by vomiting. The mind, however, remained clear and the temperature normal, except after the convulsions, when it became slightly elevated.

18th.—Five days afterward he had another rigor, accompanied by severe headache and convulsions, and operation was again urged by the attending physician.

20th.—Permission having been finally granted, chloroform was administered and the fistula exposed by a curvilinear incision over the anterior parietal region. The greater part of the squamous portion of the temporal bone was depressed as a whole (as if from a hammer-blow), and fragments of the sphenoid and parietal were firmly interlocked with it. No spicula or loose fragments were found. The dura was thickened and inflamed, and bulged into the wound without pulsation. A small incision, including a quadrilateral flap, was made, and the membrane lifted up, when the brain beneath protruded through the opening; it was dark, granular, and did not pulsate. An exploring needle found pus at the depth of an inch, and about three ounces of yellow laudable pus were evacuated with dressing forceps passed by its side. A probe demonstrated a cavity as large as a hen's egg; this was irrigated with mercuric-biniiodide solution (1 to 2,000), and then the dural edges were sutured with fine catgut, a drain of the same material having been led from the bottom of the abscess to the posterior angle of the wound. The skin flaps were closed with a continuous catgut suture except at the exit for drainage, and the wound was dressed with iodoform and paper wool. In a few hours the temperature fell to the normal and the pulse to 86. The wound healed except at the drainage outlet in a few days, and pus was discharged for a week. After this the convalescence was uninterrupted, and on the thirteenth day after the operation the boy was about the house. On the thirty-first day he was discharged well.

June 8, 1888.—I saw him at my office six months after in perfect health. The father states that when he is angry a pulsating swelling can be seen at the site of the operation. This is filled with a firm but elastic connective tissue, and is of some surgical interest as illustrating, so far as it goes, the correctness of Horsley's views as regards the very early withdrawal of drainage apparatus and the immediate suturing of the skin flap in operations upon the skull, with the purpose of both preventing hernia of the brain and obtaining a certain amount of compensatory pressure from accumulated wound secretions. In this case the catgut drain was removed and the wound left to close on the fourth day, as the amount of pus discharged was so slight.

* Read before the New York Surgical Society, October 10, 1888.

In looking over the literature of the subject I can find but seven similar cases in which recovery followed operative relief, although successful explorations for intracranial suppuration, due to other causes—such as otitis, fevers, blows, etc., or in which the accumulation of pus was between the cranium and the dura mater—have been done with increasing frequency during the last few years.

CASE I.—Elcan* reports the case of a boy of five who sustained a fracture of the left parietal bone from the kick of a horse. Brain matter exuded from the wound, but there was no apparent depression. The patient did well until the seventeenth day, when symptoms of compression appeared, with impairment of speech, hemiplegia, and a gradually increasing coma. On the twenty-sixth day the skull was trephined and depressed bone found and elevated. Cold-water dressings were used. Hernia cerebri followed, and, although the boy's intelligence remained perfect, complete aphasia gradually developed. On the sixty-second day intense headache, accompanied by a serous discharge from the wound, developed and increased for the next twelve days, at the end of which the ununited fragments of bone left at the former operation were removed, leaving an opening two inches and a half by an inch and a quarter wide. An abscess was now discovered, and about half a pint of thin, white pus removed, leaving a cavity at the bottom of which the base of the skull could be felt. The cavity was stuffed with lint, saturated with a solution of carbolic acid. At the end of two days the walls of the cavity had so completely collapsed that the brain was again seen protruding from the wound. At the end of a year and a half complete recovery had been attained.

CASE II.—W. O. Maher† had under his care a girl of four years and a half, with a compound fracture of the right frontal bone, necessitating the removal of necrosed bone some weeks after the accident. This case also was complicated by hernia cerebri, and as a result a sinus remained, when, three months after the accident, convulsions limited to the left arm and face, pain in the head, and symptoms of an alarming character suddenly developed. The sinus was opened up, and a director passed through its deeper angle downward and backward into the right frontal lobe; pus was evacuated, provision made for thorough drainage of the abscess cavity with rubber tubing, and irrigation with carbolic acid (2½ per cent.) made. At the end of a fortnight the drain was removed, and an excellent recovery followed.

CASE III.—Petit‡ trephined a child of nine years for a compound fracture of the frontal bone, elevating depressed fragments. On the fifth day fever and headache came on, and upon the following day the dura mater was found bulging into the trephine opening. It was incised and about half an ounce of fetid dark-brown fluid evacuated. The symptoms, however, continued unrelieved until the eleventh day, when rapid improvement occurred, and the dressings were found saturated with pus. Recovery ensued in two months.

CASE IV.—P. H. Watson* operated on a girl who, a few months previously, had been struck on the head by a piece of metal, sustaining a compound fracture of the frontal bone without depression. The wound healed slowly under water dressings, but a fistulous tract remained through which a probe could be passed three inches and a half into the brain; through this opening pus was constantly discharged. The patient was

in good general health, and complained of no pain or headache. Six months after the injury the fistula was laid open and the bone beneath trephined; the dura was adherent, and incised crucially, when a wineglassful of pus escaped in "pulsatory waves." No drainage, and simple water dressings constituted the treatment. Slight convulsions followed the operation, but rapidly subsided, the patient improving steadily until the eighth week, when the wound became obstructed and the patient at once passed into a state of somnolence accompanied by severe convulsions. Rapid subsidence of the symptoms followed the reopening of the wound, and recovery ensued in six months.

CASE V.—Ercilza* had under his care a man wounded by a stone, which produced a compound depressed fracture "at the root of the nose." No head symptoms of any kind were present, and the wound was treated antiseptically, but on the twelfth day a pulsating tumor appeared, from which, when incised, pus escaped in jets. The man's mental condition was perfect, but a trephine was applied at the side of the depressed bone, and, after elevating it, the operator removed a fragment of bone from the first left convolution in which it lay surrounded by an abscess, which emptied itself through the incision. Another abscess was found between the brain and the skull, so large as to admit the passage of a thick drainage-tube five centimetres. Irrigation with the mercuric solution and a Lister dressing were applied. As the wound was in an awkward position for drainage, the patient was required to stoop over when being dressed, and "one could see the brain fall in the same direction, expelling the pus mixed with cerebral fluid." In two months the patient was discharged cured.

CASE VI.—Holden† had a case of compound fracture of the left parietal involving the frontal in a boy of eighteen, injured by a bursting bottle. Brain matter escaped through the wound, but the patient was discharged in six weeks with no symptom but deafness on left side. No paralysis or mental disturbance was manifested at any time. For some months small fragments of dead bone came away, but the boy resumed his work in a few months and continued at it until a year after his injury, when he fell, sustaining a severe concussion of the brain, followed for three weeks by convulsions limited to the left leg and arm. He was then free from the convulsions for five months, when they returned at intervals for two weeks, accompanied by vertigo. He was now examined and pus was found exuding from the site of the old injury, where a fistula remained. A month later severe headache and rapidly deepening coma developed, in which condition he was operated upon without an anæsthetic. Trephining was done over the fistula, the dura was divided and turned back, and five ounces of fetid pus were evacuated. The patient at once became conscious, the pulse fell from 160 to 80, and the patient recovered in four months.

CASE VII.—A case similar to my own was reported to this society by the late Dr. Little,‡ a child of seven having developed symptoms of abscess a month after a compound fracture of the right parietal. Coma and convulsions, which were present, rapidly disappeared after the removal of some undepressed fragments of bone, and the evacuation of a drachm of pus by simple puncture. Recovery, complicated by hernia cerebri, followed.

These eight cases are the only ones of recovery from operation for abscess following compound fracture which I have been able to find. In three cases operated upon by

* "Am. Jour. of the Med. Sciences," 1880, p. 426.

† "Australian Med. Gazette," December, 1885.

‡ "Int. Encyclopædia of Surgery," vol. v, p. 82.

* "Edin. Med. Jour.," 1870, 16.

* "Provincial Med. Jour.," 1887, p. 179.

† "St. Barthol. Hosp. Reports," 1873, 96.

‡ "Annals of Surgery," 1883, p. 137.

Hulke,* Kinloch,† and Noyes‡ a fatal result ensued, but from causes not attributable to the operation.

Seven cases of abscess complicating compound fracture are on record in which from various causes no operation was done, or the pus not evacuated, although within easy reach; or where obstruction of the opening already made was allowed to go unrelieved. These cases all terminated fatally, and were reported by J. Pancoast ("Treatise on Op. Surg.," p. 106), Morton ("Phil. Med. Times," Oct., 1874), Lucas ("Lancet," 1884, vol. ii, p. 998), Post ("Annals of Surg.," 1883, p. 138), De la Peyronie ("Mém. de l'Académie royale de chir.," tome i, p. 319, Paris, 1743), Ashhurst ("Trans. of the Path. Soc.," Phil., 1876, p. 2), and Le Moyne (Phil. "M. and S. Rep.," 1883, vol. xlviii, p. 629).

The latter case possesses some features of special interest, as the boy, who was conscious on admission to the hospital, and gave no signs of cerebral mischief except pain during dressing and sighing respiration, died suddenly in his sleep during the night of the sixth day, the autopsy revealing an abscess of the size of a chestnut in the fissure between the lobes of the cerebellum, which, lying under the arachnoid, had caused death by pressure on the fourth ventricle and respiratory centers.

Besides the classical case of Dupuytren,* the first recorded success, the following cases of compound fracture, caused by penetrating injuries, were also successfully operated upon for consecutive abscess:

A policeman received a comminuted fracture of the left frontal bone opening into the sinus. Loss of vision in the left eye, headache, and vomiting led to exploration of the wound, evacuation of pus from the orbit, and thorough drainage of the wound. By the third week sight was returning, and the patient was able to go out by the thirty-third. This indiscretion was followed by serious head symptoms, and at the end of a week profound coma and involuntary evacuations. A trephine was now applied to the site of the injury and the brain explored in various directions, until at the depth of six centimetres and a half pus was detected and evacuated by dressing forceps, and a drainage-tube applied. The patient was conscious, and conversed three hours after the operation, and four months later was able to resume his duties. ||

A man under Mr. Rivington's^A care, who had received a punctured wound of the right parietal bone from a falling file, was trephined a month after for head symptoms, which had begun on the third day after the injury, and pus evacuated from beneath the dura. In two months he was discharged as cured. In nine months he was again operated on for left hemiplegia, convulsions, and a tender and contracted cicatrix at site of injury. This was incised, and his symptoms rapidly disappeared.

Seven months after, the convulsions again appeared, accompanied by severe headache and impairment of speech and vision. A small piece of necrosed bone was removed, but with no improvement. Four months later he was again operated upon while still suffering from hemiplegia and double optic neuritis. The trephine hole was enlarged, a bit of dead bone removed, and the dura punctured. Large amounts of pus es-

caped for a day or two, and the patient recovered perfectly in two months.*

A soldier, several weeks after a gunshot fracture of the skull, which had left a fistulous opening from which pus, blood, and broken-down brain substance escaped, was trephined by Watson,† and a portion of a ball lying in an abscess cavity was picked out with a dressing forceps from the left hemisphere. The lad, who had previously been in a state of extreme exhaustion, rapidly recovered.

Weed‡ operated successfully on a case in which a pistol-shot wound of the forehead was followed by convulsions, aphasia, and coma. Recovery followed the evacuation of half an ounce of offensive pus.

Thomas,§ of Kentucky, had a case in which a cow's horn penetrated the inner canthus of the left eye, and, ranging upward, tore off the whole frontal bone, leaving it hanging by the skin of the temple like a door upon its hinge. All loose bone was removed, the periosteum and flap put back in place, and drainage made with silk threads. Recovery, with reproduction of frontal bone, occurred under simple water dressings.

This case, occurring in 1875, is probably the first in which drainage was practiced in this country. It is doubtful, however, if it was a true case of abscess, though so reported. Of the cases operated upon for abscess following penetrating injuries of the skull, four have proved fatal; they were the cases of Noyes ("Am. Jour. of the Med. Sci.," 1882, p. 45), Heustis ("Alabama Med. Assoc. Trans.," 1881, p. 506), von Bergmann ("Wiener med. Presse," 1886), and Nancrede ("Int. Encyc. of Surg.," vol. v, 1883), while many cases are scattered through the literature of the past twenty years, in which, as in the group of seven mentioned in the "Surgical History of the War" (vol. i, p. 184), the patients were allowed to die unrelieved, although, as the autopsies proved, operative measures would have been easy of performance, and probably successful in most of them. A summary of the twenty-six cases of cerebral abscess now reported shows that, out of twenty cases operated upon, fourteen were successful; that, out of the six fatal cases, life was prolonged and the cerebral symptoms were entirely or greatly relieved in four; while a comparison of the cases in arbitrary groups shows that, with two exceptions (in a boy of eighteen and an adult), the eight recoveries from compound fractures occurred in children under ten, while, with one exception (in a boy, age not stated), the six recoveries from perforating injuries were adults. The six fatal cases were all in adults.

The number of recoveries, therefore, is nearly twenty per cent. higher in operations for cerebral abscess complicating open wounds of the cranium than in those done for abscess arising from all causes, so far as we can judge from the meager statistics at present available, and stated by Nancrede as fifty per cent. If the present surgical tenets in regard to free drainage of suppurating cavities and actively inflamed tissues are correct, the reason for this fact is not far to seek. The tolerance of the brain to operative interference when conducted on these principles certainly needs no demonstration, while recoveries from the most extensive

* "Int. Encyc. of Surg.," vol. v, p. 85.

† Phil. "Med. News," 1882, pp. 41, 121.

‡ "Am. Jour. of the Med. Sci.," 1882, p. 45.

§ "Leçons orales," 2d ed., tome vi, p. 146.

|| "Am. Jour. of the Med. Sci.," July, 1884, p. 17.

^A "Brain," 1882, vol. iv, p. 41.

* "Brain," iv, 13.

† "Edin. Med. Jour.," 1870.

‡ "Int. Encyc. Surg.," vol. v, p. 82.

§ "Med. News," Feb., 14, 1885.

cranial fractures no longer excite more than a passing interest.

This fact that free drainage is at once provided for in injuries of this description, combined with the improved methods of treating such wounds, would seem to account for the extremely rare appearance of abscess as a sequel to them.

The converse of this proposition would seem to point to the same conclusion, since glancing blows upon the skull, where the skin is unbroken, and gunshot wounds whose external orifices are soon closed by inflammatory processes or shreds of tissue, are among the most frequent causes of traumatic cerebral abscess.

Of course, in both these classes of injury the splintering of the inner table adds a fresh element of danger, if left unrelieved, abscess from this source having been the most common cause of death in gunshot wounds of the skull during our civil war, under the expectant treatment of that day.

So far as diagnosis is concerned, the most constant symptoms present in the cases reported were headache or tenderness on pressure upon the affected side, with suddenly developed convulsive seizures, terminating in paresis and coma. Rigors, giddiness, and vomiting were seldom noted, while subnormal temperatures, to which some importance has been attached by Nancrede, were rarely seen; on the other hand, rapid variations from nearly normal to higher temperatures were oftener recorded. Optic neuritis, when looked for, was seen in very few cases, and then at a late period of the disease. When found, however, at the onset of the acute symptoms, with no general disease as a cause, it is, according to Gowers ("Diseases of Brain," p. 231), of great diagnostic value. So far as their bearing upon our present knowledge of cerebral localization is concerned, these cases, as well as many others which I have looked over in connection with them, bear out the conclusions of Starr,* that abscess of the frontal lobe is accompanied, as a rule, by neither paralysis, aphasia, loss of sensation, nor sensory phenomena, the prevailing disturbance being one of reason or judgment, while large accumulations of pus may be present in the temporo-sphenoidal lobe with no subjective symptoms other than deafness in the opposite ear, or loss of smell; and, finally, hemianopsia or visual hallucinations point with fair probability to abscess of the occipital lobe. P. S. Connor† mentions a case in which paralysis of the arm (and no other) accompanied a punctured fracture of the foot of the first frontal convolution, the rest of the motor area being healthy. And a few similar exceptions to what are at present accepted as laws have been noted; the exceptions, however, are apparent rather than real, and are being rendered less frequent as more exact knowledge of the functions of the cortex is acquired. More especially is this true since the discovery by Duret‡ that motor disturbances of a given limb or region may be due to irritation of the dura mater, a fact which would probably explain the

exception just noted, as well as some of the cases in which spasm or contractures of muscles have occurred on the same side as the abscess or injury.

Generally, however, in abscess following compound fracture, the site of the external injury, taken in conjunction with the nervous disturbances, offers clear indications as to the seat of the suppurative process. When, however, the location of that area as determined by the nervous phenomena is remote from the fracture, the surgeon as a rule is justified in disregarding the latter, and exploring directly over the region indicated by the former, as has been successfully done by Macewen and others.

While it seems to be the plain duty of the surgeon, in the light of modern researches, to treat all localized intracranial suppuration as he would similar affections in other parts of the body, and by incision, irrigation, and drainage to avert the possibilities of diffused inflammatory conditions or rupture into the intracranial cavities, it would seem still more incumbent upon him to prevent the inception of these processes by early removal of their exciting causes.

In the case of punctured and gunshot wounds and of compound fracture attended by depression of the fragments, or even with comminution without depression, I believe it is now a generally accepted axiom among surgeons that early removal of the loose or depressed fragments is not only justifiable but advisable, even where no brain symptoms are present, the operation being viewed as a purely preventive measure. With regard, however, to simple undepressed fractures or simple depressed fractures without accompanying brain symptoms, or even compound fractures where no depression or comminution exists and brain symptoms are absent, a wide variety of opinion still exists. In looking over the literature of cranial injuries, one can not but be impressed with the large number of fatal cases of abscess following slight injuries to the head and accompanied by fracture of the inner table of the skull with little or no external sign beyond a fissure. The case-books of hospitals and the experience of every surgeon afford proof of their frequency. Twenty cases of fracture of the inner table without injury of the outer are reported as having occurred from glancing gunshot wounds of the scalp during the late war,* all of which, with one exception, proved fatal, the solitary survivor recovering after several months with the loss of a large piece of the occiput from necrosis. Of the nineteen others, I find that thirteen proved fatal from cerebral abscess, while of the remaining six no mention is made of the autopsy in four, though one patient had marked symptoms of abscess before death, and the two others are described as having died from encephalitis. As a matter of fact, this class of fractures is the most common cause of traumatic abscess in civil as in military practice, and as such should be logically treated by early exploratory incision of the scalp and trephining the bone if fissure be found or brain symptoms have developed. It is certainly far less dangerous to the patient to have a simple fracture converted into a compound one under antiseptic precautions than to leave him subjected to the uncertainties of his position, especially as

* "Am. Jour. of the Med. Sci.," April, 1884.

† "Annals of Surgery," 1885, vol. i, p. 380.

‡ "Brain," 1878, vol. i, p. 29.

* "Med. and Surg. Hist. of the War of the Rebellion," Part I, p. 150.

the tolerance of the brain to properly conducted explorations is now so well known. I can not bring this paper to a more fitting close than to quote the very recent remarks of one of the most practical and conservative of English surgeons, Mr. Bryant:

"Under all circumstances it is the surgeon's duty to remove whatever source of trouble the presence of a depressed fracture may bring to an already serious case of cerebral injury."

"Should any symptom appear or persist which even suggests any intracranial complication, the operation of trephining should be at once had recourse to."

"The cerebral injury needs the surgeon's care, and not the fracture, which will take care of itself."*

CHRONIC PURULENT INFLAMMATION OF THE TYMPANIC ATTIC (RECESSUS EPITYMPANICUS).

BASED ON THE OBSERVATION OF TEN CASES ADDITIONAL
TO TEN CASES ALREADY REPORTED ELSEWHERE.†

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My first communications on this important aural disease were made in a "Treatise on the Ear," in 1877, which were further continued as a report of ten cases, with their treatment, in the "American Journal of Otology" in 1881. Again, in 1884, in a second edition of "A Treatise on the Ear," I published further considerations, especially upon the treatment of this disease.

Since the latter date I have collated the notes of ten cases observed by me, and now lay them before this meeting.

This subject has been most ably written upon in this country, since between 1874 and 1883, by Dr. J. Orne Green,‡ Dr. Clarence J. Blake,* Dr. Horace G. Miller,|| and Dr. Albert H. Buck,^ and subsequently by Dr. Samuel Sexton ◇ and Dr. H. N. Spencer.‡ In Germany, Politzer wrote of this disease as early as 1870.‡

Subsequently in Germany, Morpurgo,‡ Hessler,** Dusterwald,†† Paul Wirtz,‡‡ Kretschmann,** and Walb||| have published articles on this subject, and incidentally this disease

has been mentioned by von Tröltzsch (1881), Bezold (1883), and Schwartze (1885). Aside from these two sources, I know of no other publications on this subject in any other country. This I feel must be due to the fact that the form of the purulent disease has not been recognized, for that it exists elsewhere than in America and in Germany we all feel very sure. I feel quite sure I have overlooked this particular lesion myself in some cases of chronic purulent otorrhœa which I have not been able to observe often. The cases which I now briefly present are numbered from XI to XX, as they are really a second series of ten cases additional to those already presented elsewhere, as referred to, and make a total of twenty cases I have reported.

CASE XI.—George G., aged forty-two, presented himself for the removal of a plug of cerumen. After the auditory canal was cleared a small ulceration and perforation of the membrana flaccida was discovered. This was evidently due to erosion and pressure of the wax plug, and may be classed among those of traumatic origin. There was no pain, and the ulceration and perforation healed rapidly upon removal of the cause of irritation—viz., the pressure from the mass of cerumen.

CASE XII.—The Rev. D. K., aged sixty-five, presented a perforation in the right membrana flaccida, with copious and offensive purulent discharge. Under the use of instillations of a solution composed of sulphate of zinc, gr. j; salicylic acid, gr. j; and water, f 3j, the discharge became less and the hearing improved greatly. In this case there was shown a tendency to the formation of a leathery scale of pus over the perforation, as is often shown in cases of this form of aural disease. The case had been very chronic, but had never suffered pain from subacute attacks.

CASE XIII.—Miss H. T., aged twenty-eight, stated that a few months previous to the first consultation she had first observed a discharge from her left ear, without any preceding pain. On examination, there was found a large polypus blocking the fundus of the canal, obscuring the membrana tympani. The polypus was snared off, and the pedicle treated by touching with chromic acid. When the latter was finally entirely removed, a large perforation, embracing the entire flaccid membrane, was discovered. The discharge was checked by the use of instillations of alcohol and water.

CASE XIV.—Miss Margaret X. Y., aged thirty, had scarlatina at the age of three years, which was followed by otorrhœa, and some years later polypi were discovered and removed. Her hearing was very bad while a school-girl. Symptoms of phthisis set in in early womanhood, and the patient had a hard struggle to reach thirty. Chronic otorrhœa continued in both ears, but chiefly in the right ear. Travel in Europe and California relieved the phthisical symptoms to a great extent, and the ears became less troublesome. The first examination revealed a perforation in the membrana flaccida of each ear. In the right ear there were granulations and considerable suppuration; in the left ear no granulations, and only a slight purulency. The hearing was best on the left side. Treatment had the effect of checking the discharge on the left side, and lessening it on the right side, in the course of a month. In the autumn of this same year—i. e., four months later—there was a return of discharge from both membranæ flaccidæ, attended with eczema of both external auditory canals. The cachexia of this patient prevented entire cure. She died abroad this summer.

CASE XV.—Mr. E. R. D., aged twenty-five. This case had been under treatment for chronic aural catarrh ten years previous to the beginning of his purulent disease. He stated that two years before this consultation, October 12, 1882, he had had

* Bryant, "Lancet," September, 1888.

† Read at a special meeting of the American Otological Society, at Washington, September 18, 1888.

‡ "Boston Medical and Surgical Journal," March, 1874.

* "Transactions of the American Otological Society," 1874.

|| "Transactions of the American Otological Society," 1878.

^ "Diagnosis and Treatment of Ear Diseases," New York, 1880.

◇ "Transactions of the American Otological Society," 1885.

‡ 1887.

‡ "Wiener med. Wochenschrift."

‡ "Archiv für Ohrenheilkunde," 1883.

** *Ibid.*, 1884, Bd. 19 and 20.

†† "Thesis," 1884, mentioned by Walb, "Archiv für Ohrenheilkunde," Bd. 26, 1888.

‡‡ "Thesis," 1886, mentioned by Walb, "Archiv für Ohrenheilkunde," Bd. 26, 1888.

** "Archiv für Ohrenheilkunde," Bd. 25, 1887.

||| "Archiv für Ohrenheilkunde," Bd. 26, 1888.

an abscess in the left ear, the precise nature of which I could not determine. He now sought relief from an offensive discharge. There was found upon inspection a tense membrana tympani, immovable under the Siegel speculum, thick and white in appearance, and thrown into striæ. The luster, however, was good. There was a perforation in the anterior part of the membrana flaccida, from which there came a thick, offensive, scanty discharge which clung to the upper wall of the auditory canal. The patient complained of tinnitus and great hardness of hearing in this ear. Voice heard six inches. The right membrana tympani was also rigid and red at the periphery. Luster good. No purulent disease or any cicatrix in the membrana flaccida of the right side. H. = voice, three feet. By January 12th, no discharge. In a month it returned, matter not flowing over the membrana vibrans. Under boric-acid insufflations chiefly the discharge ceased in a week and remained checked for a month. About this time there occurred an acute attack in the other ear, April 26, 1883, with pain, perforation in the membrana flaccida, and discharge, which was treated with boric-acid powder. A slight discharge, however, continued into summer, while not under observation. In August a polyp was found in the right ear protruding from the membrana flaccida. The polyp was extracted and the running ear treated by insufflations of powdered boric acid. The discharge ceased under this treatment in a week. During this time the left ear was treated by instillations of a solution of sulphate of copper, gr. v to f 3 j of water, under which the discharge ceased and the hearing became nearly normal.

Resuming the history of the left ear, it must be said that on April 6th the patient observed a bad odor coming from this ear. An examination revealed a large, tough scale of epidermis and pus over the region of the membrana flaccida and the upper wall of the canal, near the membrana tympani. A very slight, thick discharge continued now until November 8th, when, without any warning, the discharge became very profuse, and the perforation was found to have become much larger. Pus welled from the perforation when the membrana vibrans was pressed. Into the attic cavity a solution of sulphate of copper was injected for some days and the discharge decreased. I then injected a solution of nitrate of silver. Some intense pain followed for a few moments and some dizziness. The weather was very inclement at this time and the patient was exposed. He took cold and had earache, and was in bed for some weeks with otitis externa near the membrana tympani. After this the perforation was seen as a distinct hole in the wall of the canal near the membrana flaccida, coalescing with the latter. Persistent, slight purulent discharge continued, not checked by anything. Discharge, however, gradually diminished in the course of three weeks, and several days elapsed without any. Then the middle ear (attic) seemed to fill up and overflow through the membrana flaccida. Syringing by tympanic syringe removed scales of epithelium. Microscopic examination (January, 1884) of scales from tympanic cavity showed them to be cholesteatomatous. The ear was now under injections of Dobell's solution chiefly, by tympanic syringe. Very little discharge now came from the attic. Still it did discharge, and the neck of the malleus could be seen running across the perforation. The patient used alcohol at home until April, when he went to Europe for three months. Very little discharge during absence. Had used syringing and alcohol now and then while abroad. Perforation unchanged in appearance. Lead injections now used for some weeks. Syringe-nozzle can be inserted behind or before neck of malleus. No denuded bone can be felt. A probe ran in half an inch. Copper solutions used a little while. Nearly a year elapses, during which the ear is slightly running, but the use of instillations of alcohol at home controls the discharge.

February 1, 1886.—Another acute process in the right ear.

Membrana flaccida perforated posteriorly. Granulations apparently from attic and a boggy mass in anterior region of membrana tympani. Touching this caused some dull pain in the frontal region. Finally I removed a large slough from the region of the membrana flaccida and revealed a large perforation. This was treated with insufflations of boric acid tinctured with hydrastin, and was soon healed.

Treatment of the left ear begun again March 1, 1886, by means of injections of peroxide of hydrogen and three-per-cent. solution of carbolic acid, and continued frequently till July 31st; then again in the fall. By September less discharge than there ever has been. The patient has used alcohol drops at home three times weekly. The membrana vibrans was dry and shining. Now and then patient says gushes of discharge seem to come into the ear. It may be supposed they are overflows and demand better drainage, which would also mean a better chance for treatment.

CASE XVI.—Miss W., aged sixty, states that six months ago she noted tinnitus in the right ear. This ear had been deaf for many years and a polypus is said to have been removed from it ten years previous. After the tinnitus set in the hearing function failed and some nausea and dizziness were felt, with a sense of pressure in the ear. Facial paralysis was present six or seven years ago, perhaps about the time the polypus was formed. When first examined by me, there was found a whitish pulsatious mass over the region of the membrana flaccida. Attempts at removing this with a probe caused nausea and vomiting. After soaking the rest of the mass with a solution of bicarbonate of soda, glycerin, and water, the remnant was removed, and an ulceration in the membrana flaccida with a polypus attached to it was seen. The polypus was removed and the discharge checked by touching with nitrate of silver on cotton and then insufflations of boric-acid powder.

CASE XVII.—Dr. K., aged thirty. This was originally an aspergillus case. After the aspergillus was cured, I discovered a cicatrized perforation in the membrana flaccida. The patient was a subject of hypertrophic nasal catarrh, and gave the history of a former purulent discharge from the ear.

CASE XVIII.—Mr. R. M. C., aged thirty-four, first consulted me in 1876 for chronic purulent otorrhœa on both sides. On the left side there was a large perforation extending over the membrana flaccida, and comprising also the margo tympanicus of the upper wall of the auditory canal. The discharge was checked on this side and has remained so to the present, with a slight relapse in June, 1883.

CASE XIX.—Mr. H. F. W., aged thirty-five, first consulted me on December 10, 1883, for chronic purulent otorrhœa, left side, with a perforation in the membrana vibrans. This was relieved and the patient was not seen for nearly eighteen months, when he presented himself with a perforation and granulations in the membrana flaccida. The perforation in the membrana vibrans was still present and the mucous membrane discharging. Probably the perforation in the membrana flaccida was from maceration and erosion, as pus would hardly force its way through this when a large perforation was already in the membrana vibrans. The granulations were touched with chromic acid and soon disappeared. The speedy cure is another evidence that the attic was not the seat of much, if any, disease.

CASE XX.—July 14, 1888, Miss M., aged twenty-three, now under treatment. In childhood her tonsils were large; excision of these was followed by some earache and dullness of hearing at the time, but soon passed off and was forgotten, excepting that she thinks the right ear, the now diseased one, has never heard sharply. Six years ago, suddenly, without any pain or warning of any kind, the right ear felt stopped. Examination made by her physician then revealed a polypus. Since then,

off and on, there has been a slight offensive discharge; hardly enough to run from the ear. Numerous polypi have been removed, probably from the membrana flaccida perforation. I found the membrana vibrans intact, retracted, white, dry, and shiny, and a large perforation in the membrana flaccida, with the neck of the malleus visible, and a very scanty discharge, not very offensive. I syringed the attic with peroxide of hydrogen and then with a two-per-cent. solution of carbolic acid, by means of the tympanic syringe. At the second syringing I brought to view a small polyp, evidently attached to the inner edge of the perforation and concealed in the attic. I removed it by slender forceps. After this the discharge was less. During the past summer the patient wiped out the fundus of the canal with absorbent cotton every second day, and sometimes mopped out the ear with two-and-a-half-per-cent. carbolic-acid solution. When seen September 1st there was found to be the very minimum of discharge, some days none. No pus apparently present, as peroxide of hydrogen fails to make a foam. A small granulation was found attached to the lower posterior edge of the perforation, and removed by means of slender forceps. The attic was syringed with a three-per-cent. solution of carbolic acid by means of the tympanic syringe.

Synopsis of the ten cases herewith presented:

Sex.	{ Men, 6. Women, 4.	Position.	{ Anterior, 9. Posterior, 2. Central, 6. Entire destruction of the flaccid membrane, 2.
Ear.	{ Right, 4. Left, 4. Both ears, 2.	Cause.	{ External, traumatic, 2. Internal, tympanic, 8.

Polypi were found in seven cases—in both ears, in both the cases in which the perforation was in both ears.

Aspergillus was found in two cases—viz., in Case XVII and in one of the cicatrized cases. A simultaneous perforation in the membrana vibrans was found in only one case in the entire twenty—viz., in Case No. XIX, reported in this paper. It may be of interest to compare this synopsis with the synopsis of the ten cases previously reported elsewhere.

Sex.	{ Men, 7. Women, 3.	Position of perforation.	{ Anterior, 2. Posterior, 3. Central, 3. Entire destruction of the membrana flaccida, 2.
Ear.	{ Right, 4. Left, 3. Unrecorded, 1. Both ears, 2.	Cause.	{ External, traumatic, 3. Internal, tympanic, 7.

Polypi were found in four instances in this series (first ten), and the perforation was in both ears in two instances. In this series one of the cases, recorded in the "American Journal of Otology" as in the right ear, should have been placed under "both ears."

In addition to this synopsis we learn from the notes of the cases that in many instances this disease of the ear comes on without pain, and may be said to be chronic from the outset. Children are not liable to this form of chronic ear disease (one in twenty), though some observers state that acute inflammation of the attic, with perforation of the membrana flaccida, is frequent in children. The chronic form occurs in 1 per cent. of all cases, according to my

experience, about the same as Bezold's ($1\frac{1}{4}$ per cent.). The hearing is greatly impaired in the chronic form of this disease, though it often improves temporarily after the attic is washed out. The discharge, as a rule, is scanty, thick, and very offensive. Being scanty, it rarely flows over the membrana vibrans, and the observer is often surprised to find the latter dry and shining in an ear which is the seat of a discharge. The latter usually clings to the upper wall of the auditory canal, forming gradually into a tough pellicle, darkened by exposure to the air. This may extend along the upper wall to the external meatus, underneath it being a thin layer of fluid pus. Upon the removal of this pellicle the perforation in the membrana flaccida can be seen. A scanty discharge of this kind may go on for years without being copious and fluid enough to flow down over the membrana vibrans, which, as stated, may misguide the inexperienced observer.

The absence of the "perforation whistle" in these cases has often been noted by writers on this subject. I think this is due to the fact that the perforation in the membrana flaccida is not often anterior and therefore not in communication with that part of the attic nearest the tympanic mouth of the Eustachian tube.

When the perforation is anterior, as in a case of a boy given in my first series of ten cases, the perforation whistle may be very marked. In the case alluded to the flaccid membrane of each ear was perforated anteriorly, and in both ears the "perforation whistle" was easily produced. As I have never observed it where the perforation was not anterior, I have concluded that the ossicles and the swollen and secreting mucous membrane about them interfere with the passage of air through a perforation beyond or behind them, and hence the perforation whistle is not heard in posterior or central perforations.* That the perforation whistle was not heard in the cases I have tabulated as entire destruction of the membrana flaccida must have been due to the fact that the Eustachian entrance into the tympanic cavity was in some way obstructed.

Treatment.—The chronic form of purulent inflammation in the attic of the tympanum is difficult to cure, especially when the attic has been the starting point of the disease, while those cases originating from without the drum cavity (the traumatic) are easily managed.

The cases of tympanic origin most easily cured or benefited are those in which the perforation in the membrana flaccida is large, and in which, of course, medication and drainage are most complete. Of the various forms of treatment, the most successful are cleansing and antiseptic, as, for example, that by means of peroxide of hydrogen and carbolic acid.

The only way of directly washing out the attic and of medicating it is by means of the tympanic syringe of Dr. C. J. Blake.

The best applications have just been named, but alcohol and aqueous solutions of zinc, bicarbonate of sodium, chloride of sodium, lead, copper, etc., may be applied. Pow-

* Kretschmann (*loc. cit.*) gives two cases, both of them in boys under thirteen years of age, with anterior perforations, in whom the "perforation whistle" was observed.

dered applications are impotent in these cases, as the perforation is too small to permit their entrance into the diseased cavity. They might even do harm by blocking the small outlet for the pus, and thus aiding in forming a nidus for systemic purulent infection.

All forms of escharotic or cauterant treatment, like that by strong solutions of nitrate of silver, are not borne by the attic when in a condition of chronic purulency, chiefly, I think, because the swelling of the edges of the perforation induced by such treatment closes it, drainage is interrupted, the pus undergoes decomposition, and a dangerous inflammation in the region of the tegmen tympani may be set up, as has once happened in the experience of the writer.

So important is drainage in these cases that it has been suggested to obtain it by surgical interference, either by enlarging the hole in the membrana flaccida by continuing it up into the bone in the segment of Rivinus—*i. e.*, by cutting into the edge of the margo tympanicus of the inner edge of the upper wall of the external auditory canal,* or by excision of the membrana tympani and the malleus and incus.† One or both of these bones may be found necrotic. In fact, denuded bone can often be felt in these cases by means of a slender probe passed through the perforation.

This dead bone can be scraped if the perforation is enlarged by excision of the ossicles, or by removal of some of the margo tympanicus. Thorough cleansing of the attic is demanded in these cases if a cure is to be accomplished, and this washing out must be kept up after the attic is exposed by either the enlarging of the perforation in the flaccid membrane or removal of the malleus and incus.

A cure, more or less speedy, follows in such cases, according to Schwartze, Sexton, and others (*loc. cit.*).

Although I have not yet performed such an operation for the cure of this disease, I feel sure that hereafter I can obtain a radical cure most surely by this means—and perhaps not at all by any other—and am prepared to thus inform my patients, as this form of purulency of the middle ear, from its proximity to the brain, is the most threatening to life and demands a careful consideration of every means for its radical cure.

A CASE OF STRANGULATED HERNIA REDUCED BY FARADIZATION.

By FRED. M. BAUER, M. D.

M. LEROY having suggested the use of electricity in strangulated hernia, and the matter being referred to MM. Emery, Clocquet, and Dubois, they reported in the session of the French Academy of the 25th of May, 1826, that their experimentation on animals led them to recommend his suggestion.

Althaus in 1873 and Bartholow in 1887 cite the only cases of strangulated hernia relieved by electricity. The former mentions a case of strangulated femoral hernia so reduced by M. Delaux, of Toulouse. Electricity was tried in this case because taxis and all other means had proved

useless, and because the patient would not give her consent to an operation. Campbell, Beard and Rockwell, and others speak of this same case.

Professor Bartholow, in his "Medical Electricity," mentions three cases as follows: "Dr. Suprunenko reports a case of right inguinal hernia cured by the faradaic current when strangulated and unrelieved by taxis; Dr. Bronstein also publishes an account of a case of incarcerated scrotal hernia in which taxis, anæsthesia, and the warm bath failed, but in which all the symptoms disappeared in a few minutes after faradization; and Dr. Rosenhart gives still another case relieved in a few minutes by the same means."

To these four cases I would add my own:

Mrs. E., widow, aged sixty-four years, private patient, had had a reducible inguinal hernia for twenty-six years, but had never worn a truss. It had frequently appeared to the size of a goose-egg, but she could always reduce it herself.

On the 29th of September, while attending to her household duties, she noticed that the rupture had bulged out farther than usual and that it was painful on pressure. As she could not replace it, she put on some ice for a while and then tried again without success. Meanwhile the tumor became more and more painful and seemed to increase in size. Soon nausea and biliary vomiting set in, followed by persistent eructation of foul gases.

The patient was seen an hour and a half after the symptoms appeared. She had been having agonizing pain in the left inguinal region and had been crying lustily for help. Now she seemed in an extremely collapsed condition; anxious countenance, clammy skin, cold extremities, constant eructation of gases, pulse very small, feeble, and frequent. In the left inguinal region was found an ovoid, partly bisected tumor, measuring five inches by four inches by two inches and a half, hard and tense; flatness on percussion; no impulse on coughing; abdomen soft and relaxed. The hernia being of the indirect type, taxis was applied in an outward, backward, and upward direction. Anæsthesia was not needed, for the patient was in a collapsed condition. Taxis was entirely useless, although it was applied for about ten minutes. The swelling would neither soften nor diminish. The symptoms were becoming more and more urgent and something else had to be done quickly. Operation seemed to give the only hope. Electricity had been used in just such cases, and I determined to give it a trial. A faradaic battery (the "Phoenix") was quickly obtained; the strong secondary current was applied by means of sponge electrodes, one pole on the neck of the sac and the other pole on the lowest portion of the sac. The patient was now so collapsed that she scarcely felt the current, although it was strong enough to give the operator a severe shock when his fingers accidentally received it. In about a minute the swelling began to soften and yield somewhat to the electrodes; in about three minutes it was of half its former size and was considerably softened, and in about four minutes the electrodes were laid aside and reduction was speedily accomplished by means of gently applied taxis—the final disappearance giving the welcome gurgling sound. After the reduction the external abdominal ring admitted the end of the index finger.

Pain ceased almost immediately, but some soreness in the abdomen and the region of the ring remained. Morphine was administered hypodermatically at once, and internally at intervals afterward; hot bottles were applied to the extremities and an ice-bag to the abdomen. Three hours afterward there was normal reaction from shock; temperature, 99.5° F. There was some soreness in the abdomen and ring. On the third day she had a castor-oil stool; patient entirely well. She now wears a truss.

218 EAST EIGHTY-SIXTH STREET.

* Kretschmann, *loc. cit.*

† Schwartze, "Lehrbuch," p. 287, 1885; Sexton, *loc. cit.*, 1885. Dusterwald, 1884, according to Walb, *loc. cit.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 24, 1888.

THE MORPHOLOGICAL CHANGES IN THE BLOOD DURING
COAGULATION, AND THE CAUSES OF COAGULATION.

HAYCRAFT and Carlier, from the physiological laboratory of the University of Edinburgh, have reported in a recent number of the "British Medical Journal" some important observations on the morphological changes that occur in human blood during coagulation, and on the causes of coagulation. These are especially interesting in view of the numerous investigations recently made regarding the process of thrombosis and the relation of the blood-plates and white blood-corpuscles to coagulation of the blood. Löwit has lately shown that the blood-plates do not exist in the normal circulating blood, but are composed of a morphologically and chemically altered globulin, and result from some slight changes in the normal condition of the blood or blood-current. Their formation probably marks the first stage in the process of coagulation. Haycraft and Carlier show that the white blood-corpuscles while within the circulation show an amœboid movement, and that this only appears when diapedesis begins. It is a result of an irritation of the protoplasm composing the corpuscles. Soon after the amœboid movement begins, some of the white blood-corpuscles lose their granules, and they become clear and flattened, but do not disappear. While this is going on, threads of fibrin begin to form.

It seems probable, then, that some metabolic changes associated with the formation of fibrin occur in the globulin and the white blood-corpuscles, so that they both contribute to the production of fibrin. The first stage in this process, perhaps, is the formation of the blood-plates. Both the amœboid movement in the white blood corpuscles and coagulation, according to the experiments of Haycraft and Carlier, appear to result from the changes induced by the action of chemically inert solid bodies—such as glass, porcelain, etc.—and these authors further show, by an ingenious series of experiments, that by carefully protecting shed blood from contact with such matters and by surrounding it with a fluid of a surface tension different from its own, and with which it does not mix, it may be kept in a fluid condition for a long time. This observation rather refutes the theory of Sir Astley Cooper that the fluidity of the blood within the body is due to the vitality of the vessels, and tends to confirm the view long ago supported by Lister that coagulation was due to the action of solids upon the blood.

Professor Haycraft found that by allowing blood to drop through a layer of liquid paraffin on to greased mica-plates, he could keep the drops liquid for some time. The blood, however, could not be allowed to come in contact with any

foreign body, the cut end of the vein being everted over a glass tube so that the blood escaped directly into the paraffin. Other methods similar in principle were also used, but for human blood the following means were employed: A drop of blood was received from a carefully greased finger into a straight cylindrical glass vessel, a foot long and an inch and a half in diameter, that had been carefully filled with castor-oil. The blood is introduced in the following manner: The finger is rendered turgid with a bandage, is well smeared with some oil, plunged into the vessel, and then pricked beneath the surface of the oil. Several drops of blood may be obtained in this way. The blood in its escape comes in contact only with the tissues along the line of puncture, neither the surface of the skin nor the air coming in contact with it. After the drops of blood are gently detached from the finger by shaking it, the finger is withdrawn, and the drops begin to descend in the oil. The vessel is then filled to the brim with oil and a glass plate slipped over it, care being taken not to include any bubbles of air. It will be noted that the larger drops of blood fall more rapidly than the smaller. When the largest drop has nearly reached the bottom of the vessel, the tube should be inverted, and the drops will again begin to fall. It was found possible to keep the blood fluid for nearly an hour in this manner. The blood was finally examined by removing the drops with a well-oiled spoon and placing them upon a glass slide. Haycraft and Carlier say: "It will be found, on drawing a needle through the drop, that it is perfectly fluid. It is probable that, owing to the blood coming in contact with the tissues in the wound, an infinitesimal amount of ferment is set free, which will eventually cause clotting even though the blood is surrounded by oil."

Careful microscopical observations were also made upon the amœboid movement of the white blood-corpuscles in blood that was surrounded by vaseline. It was then found that the amœboid movement began in from one to ten minutes after the removal of the blood from the circulation, according to the temperature. The movement in some cases lasted for hours. In other cases the cells changed in from a quarter of an hour to two hours, becoming pale, indistinct granular masses, with thin nuclei still visible and capable of being stained. If the temperature is below 65° F., no movement appears. During the process of coagulation none or few of the corpuscles disappear. This observation is contrary to the generally accepted theory of A. Schmidt, who maintains that there are two kinds of colorless corpuscles—one kind breaking down during coagulation, and the other persisting, coagulation itself being the direct result of the death of the white blood-corpuscles, which, dying, yield a ferment that, acting on the blood-plasma, produces fibrin.

Haycraft and Carlier conclude that: 1. Solid matter mechanically stimulates the white corpuscles of the blood, leading to amœboid movements, if the blood is not cooled. In any case some metabolic change associated with the formation of fibrin occurs in the white corpuscles whereby they are led to contribute to the production of fibrin. 2. Coagulation of the

blood outside of the body is due to the action of some chemically inert solid body, such as glass or porcelain. 3. The action of an inert solid is much the same on the blood-plates as on the white corpuscles; it causes them to become sticky, run together, lose their contour, and change their shape.

These experiments do not determine the part played by the white blood-corpuscles or so-called blood-plates in the chemistry of coagulation, although they suggest that, so far as these bodies are concerned, coagulation is the result of living metabolism rather than of death and disintegration.

THE COMPARATIVE BEHAVIOR OF DISEASES AND REMEDIES IN CHILDREN AND ADULTS.

DR. W. H. DICKINSON, one of the consulting physicians to the London Hospital for Sick Children, chose this subject as that of a recent introductory lecture at the institution mentioned. The lecture, which has been published in the "*Lancet*," seems to have been intended largely as an argument in support of the plan of providing separate hospitals for children, and it is certainly a cogent one; but it is of interest chiefly as embodying a parallel between children and adults in their behavior under disease and under the action of drugs. It contains little of anything that is new, but it is a convenient summary of the leading facts known of the subject.

It can not always be said of a sick person that his youth is in his favor; on the contrary, it is sometimes to his advantage that he is not young. "We may be old, battered, gouty, and atheromatous," says Dr. Dickinson, "every part about us blasted with antiquity; our arteries are apt to break, and that suddenly; but we get slow, and some of our disorders partake of our disposition." Owing to the activity of nutrition in the young, it may be said in general terms that diseases involving new growths make more rapid progress than the same affections in adults, a notable example of which is seen in cases of sarcoma of the kidney. The same is true of the overgrowth of normal tissues; cirrhosis of the liver, although rare in childhood, runs a rapid course, and so does interstitial nephritis. Loss of blood and of other fluids is proportionately ill borne by children, and exhaustion is prone to occur early and suddenly in diseases that are slow in bringing grown persons to a grave condition; hence the numerous deaths of young children from mere diarrhoea while all the organs are still but little if at all impaired anatomically. Although the almost complete restriction of rickets to early childhood is well known, it is perhaps not so generally known, says the author, that a defective diet is apt to cause scurvy in infants. Sore gums, purpura, and hæmorrhages, especially by way of the kidneys, he has always been able to trace to deprivation of fresh milk of good quality, condensed milk not possessing enough of the antiscorbutic property of fresh milk.

Rheumatism is relatively infrequent in young children, but in them it is particularly prone to attack the heart. Diabetes mellitus runs so rapid a course that it may cause death in a child in as few months as it sometimes takes years to produce the same result in adults. Among inflammations, it is to those

of the brain that children are peculiarly liable, and meningitis that is not tubercular occurs more frequently than was formerly supposed. This is attributed to the exceptional activity of cerebral nutrition and development in the young. The mortality of children from pneumonia is to be imputed rather to the greater frequency with which they are attacked by it than to its proving fatal in a disproportionate number of instances. They are more liable to purulent pleurisy than adults, but a greater number of them may be cured by simple aspiration. Typhus is rarely seen in childhood, and when it does occur it is less dangerous than in grown persons. Typhoid fever varies less in the two classes of patients; it is seldom seen in infants, but Murchison once found evidence of it in a post-mortem examination of a child six months old.

Among the drugs to the excessive action of which children are particularly susceptible are opium and alcohol; among those of which they are remarkably tolerant is belladonna, as shown in a case cited in which seventy grains of the pharmacopœial extract were given daily to a girl ten years old. In regard to mercury, children with congenital syphilis seem to thrive on its use, but in other diseases it often produces injurious effects; the author has seen not a few instances of salivation, and two in which the cheek was perforated. In general, children respond to treatment, as they often succumb to disease, more readily than older patients, so that with them the physician's responsibility is the greater.

MINOR PARAGRAPHS.

RESECTION OF THE STYLOID PROCESS FOR PAINFUL DEGLUTITION.

IN the "*Internationale klinische Rundschau*" Dr. L. Réthie gives an account of the case of a man, twenty-eight years old, who in childhood had often suffered with inflammatory affections of the throat. Two years before he came under the author's observation, according to a summary given in the "*Centralblatt für Chirurgie*," he began to have pain in swallowing. After a long course of topical treatment, the author discovered a hard substance lying deep in the tonsil; apparently, it was either a calcified muscle or an abnormally long styloid process. It was from this that the pain proceeded. After unsuccessful attempts to break off the projection by pressure, the author cut into the tonsil, and carefully dissected down to the resisting material and succeeded in removing a piece about a third of an inch long. Microscopical examination showed it to be true bone and therefore a portion of the styloid process. The dysphagia ceased permanently.

THE ERADICATION OF YELLOW FEVER IN THE SOUTH.

Now that the yellow fever in the South is likely to cease with the appearance of frost, the serious problem arises of how to deal with the infected bedding. The disease was introduced into Florida by means of bedding brought by refugees from Havana. That which has been used during the epidemic is a source of danger, and, unless it is completely destroyed by burning, there is much chance of a revival of the fever in the South at no remote period. The matter is of interest to the people of the North also, for bedding may be brought here and give rise to an outbreak, the disease having been known to break out in

Florida after the occurrence of frost. Although the destruction of the bedding in question seems so obvious a necessity, when we reflect that the people of the plague-stricken district have lost almost all they possessed, it is not to be wondered at that they are unwilling to burn the beds on which they sleep. As all authorities agree that complete burning of the bedding is a *sine qua non* to the extermination of the fever, it is extremely important that such action should be taken, and it ought to be taken on one basis only, that of a fair compensation to the unfortunate people for the loss of their household effects. The expenditure of a portion of the relief appropriation made by Congress would enable this to be done, and thus every objection to the complete destruction of the bedding would be removed, and its owners would themselves gladly assist in the work. If Surgeon-General Hamilton, whose services during the epidemic have made the whole country his debtor, could conscientiously recommend such a course, the removal of every vestige of the fever would soon be accomplished, and its removal can not be made certain in any other way.

THE SUBUNGUAL CAPILLARY PULSE.

M. MILLOT-CARPENTIER contributes to the "Union médicale" a short account of a review of the subject of the subungual pulse by Dr. Mario Sacchi, in the "Riforma medica." It seems that it was first studied by Professor Grocco, who wrote about it in 1885, in the "Gazzetta medica italiana-lombardia." It was afterward studied by Quincke, Ruault, Dauchez, Hüter, Senator, and others. Observation shows that it is proper to speak of the subungual pulse as arterio-capillary and venoso-capillary. Cases of the occurrence of this circulatory anomaly are rare; Grocco recorded one example, and now Sacchi has added another. Sacchi's case was that of a woman, sixty years old, who came under treatment for anasarca. There was general cyanosis, with a low temperature; the pulse was very frequent and irregular; a systolic souffle was heard at the situation of the tricuspid valve, together with a rough and prolonged systolic souffle at the apex; the urine was diminished in amount and of low specific gravity. After two months' treatment with digitalis and sparteine, together with inhalations of oxygen for dyspepsia, the patient was apparently cured. A few months afterward, however, her troubles returned in an aggravated form, and it was then that the subungual pulse was observed in a little reddish zone formed on raising the nail slightly. It disappeared on compression of the radial and ulnar arteries, and was not retarded; it disappeared also on compression of the wrist at the level of the radio-carpal articulation. It was held to be due to a systolic reflux of blood into the veins on account of relative insufficiency of the tricuspid valve.

EMPHYEMA FOLLOWING CROUPOUS PNEUMONIA.

In the "Memorie della reale accademia delle scienze dell' istituto di Bologna" Dr. Luigi Mazzotti publishes an article on this subject, an abstract of which we find in the "Centralblatt für klinische Medicin." In three cases, in robust men thirty-four or thirty-five years old, the empyema declared itself in two days after the defervescence of the pneumonia. In all of them the pus broke through into the bronchial tubes without the occurrence of pneumothorax, and perfect recovery took place, within a comparatively short period—from three to four months after the beginning of the pneumonia. Another case, in a broken-down man sixty-two years old, ended fatally. In ordinary purulent pleurisy, according to the author, there is very high fever, usually with chills, while in that consequent on pneumonia the temperature is not very high, and there are no

chills; in the former the general condition is profoundly affected, with headache, debility, and loss of appetite, while in the latter the general condition is comparatively good; in the former there are intense pain in the chest and dyspnoea, while in the latter there is no thoracic pain and but little dyspnoea; in the former there is cutaneous oedema of the affected side, while in the latter there is none; and in the former the pus is liquid, grayish, and foetid, while in the latter it is creamy greenish, and odorless.

THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

ELSEWHERE in this issue we publish the programme of the association's annual meeting, to be held early in December. It contains, as will be seen, the titles of papers by a great number of excellent men, and the subjects on which they are to read are among those of the greatest interest to surgeons and gynæcologists at the present time. The occasion may fairly be expected to bring out much matter of great value to the profession at large as well as to the members of the association.

DIPHTHERIA FROM CATS.

THE "British Medical Journal" mentions a report made to the Central Board of Health of Melbourne, Australia, describing an outbreak of diphtheria in which the cases occurred almost simultaneously in the neighborhood of Daylesford. The local health officer's report presents strong *prima-facie* evidence that the children contracted the disease from cats, numbers of which animals were dying in the neighborhood.

THE INFLUENCE OF MENSTRUATION ON THE PULSE AND TEMPERATURE.

THIS subject has been studied by Dr. Repreff, who publishes an account of his observations in "Vratch." According to a summary given in the "Revue générale de clinique et de thérapeutique," in health the temperature and the pulse fall a day or two before menstruation, and immediately after the cessation of the flow the temperature rises, but without attaining a febrile height. In women with chronic uterine disease there is a rise of temperature during menstruation, but with a fall on the first and last days of the flow. In cases of oophoritis or salpingitis there is a febrile temperature before and after the flow, without any fall below the normal point. In certain diseases there are irregular changes of the pulse and temperature.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 20, 1888:

DISEASES.	Week ending Nov. 13.		Week ending Nov. 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	20	11	21	
Scarlet fever.....	139	28	130	2
Cerebro-spinal meningitis....	2	2	0	
Measles.....	136	11	221	
Diphtheria.....	66	24	92	28
Small-pox.....	0	1	0	0

The Woman's Hospital.—We learn that Dr. Henry D. Nicoll has been appointed as one of the surgeons to the hospital, to succeed Dr. T. Gaillard Thomas, resigned.

The "Journal of the American Medical Association."

It is announced that Dr. John B. Hamilton, the Surgeon-General of the Marine Hospital Service, has been appointed to succeed Dr. N. S. Davis as editor of the "Journal."

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 11 to November 17, 1888:*

BAILY, ELISHA I., Colonel and Surgeon. Under the provisions of the Act of Congress, approved June 30, 1882, the retirement from active service this date, by operation of law, is announced by direction of the Secretary of War. Colonel Baily will repair to his home. Par. 1, S. O. 226, A. G. O., Washington, November 14, 1888.

NORRIS, BASIL, Lieutenant-Colonel and Surgeon, and **TILTON, HENRY R.**, Major and Surgeon, are, by direction of the President, detailed as members of the Army Retiring Board appointed to meet at San Francisco, Cal., by the War Department order dated October 27, 1888, published in S. O. No. 253, October 30, 1888, from Headquarters of the Army, *vice* Colonel Elisha I. Baily, Surgeon, and Captain John J. Cochran, Assistant Surgeon, hereby relieved. Par. 13, S. O. 261, A. G. O., Washington, November 8, 1888.

McCLELLAN, ELY, Major and Surgeon, is relieved from duty at Jefferson Barracks, Mo., and will report for duty at Chicago, Ill., as Attending Surgeon and Examiner of Recruits. Par. 15, S. O. 261, A. G. O., Washington, November 8, 1888.

BARTHOLOMEW, JOHN H., Major and Surgeon, is relieved from further duty in the Department of Texas, and will report to the commanding officer at Plattsburgh Barracks, N. Y. Par. 15, S. O. 261, A. G. O., Washington, November 8, 1888.

WATERS, WILLIAM E., Surgeon, Vancouver Barracks, is granted leave of absence for one month, to take effect on or about the 1st proximo, with permission to apply for an extension of one month. Par. 1, S. O. 129, Headquarters Department of the Columbia, November 9, 1888.

ARTHUR, W. H., Assistant Surgeon, upon being relieved by Acting Assistant Surgeon J. L. Ord, will proceed to comply with Par. 21, S. O. No. 250, c. s., Headquarters of the Army. Par. 5, S. O. 123, Headquarters Department of Arizona, Los Angeles, Cal., November 5, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 17, 1888:*

DICKINSON, D., Surgeon. Ordered to the Naval Hospital, Mare Island, Cal.

BRADLEY, G. P., Surgeon. Detached from the Naval Hospital, New York, and ordered to the Iroquois.

PERSONS, R. C., Surgeon. Detached from the Army and Navy Hospital, Hot Springs, Ark., and ordered to the Naval Hospital, New York.

NORFLEET, ERNEST, Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Trenton.

HARRIS, H. N. T., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Kearsarge.

SAYRE, J. S., Assistant Surgeon. Ordered to examination for promotion.

BEYER, H. G., Passed Assistant Surgeon. Detached from the Trenton and granted six months' leave, with permission to leave the United States.

BRYANT, PATRICK H., and **VON WEDEKIND, LUTHER L.**, commissioned Assistant Surgeons, U. S. Navy.

SWAN, ROBERT, Passed Assistant Surgeon. Ordered before the Retiring Board on the 19th inst.

Society Meetings for the Coming Week:

MONDAY, November 26th: Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, November 27th: New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Boston Society of Medical Sciences (private).

WEDNESDAY, November 28th: New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

THURSDAY, November 29th: Cumberland, Me., County Medical Society (annual—Portland).

SATURDAY, December 1st: Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Obituaries.

Henry Berton Sands, M. D., died suddenly on Sunday, the 18th inst., at the age of fifty-six. For two or three years his health had been somewhat impaired, and he had gradually divested himself of his college and hospital work, but at the time of his death he was actively engaged in private practice; indeed, he died in his carriage, on his way home from a professional visit in company with Dr. A. A. Smith. The fatal attack, which was at first supposed to have been apoplectic, was ascertained by autopsy to have been one of sudden heart failure.

For many years Dr. Sands had been generally recognized as the leading surgeon of New York, astute in diagnosis, sound in judgment, and dexterous as an operator. From a very early period in his professional career until within a few months of the time of his death he occupied positions that made him widely known to his fellows—as demonstrator of anatomy, then professor in that branch and afterward of surgery, in the College of Physicians and Surgeons, and as a surgeon to several of the large hospitals. In all these offices his energy and brilliancy were appreciated, and his services as a consultant were constantly sought for by his professional brethren. At the outset of his career as a practitioner he was associated with the late Dr. Willard Parker, a man of unerring judgment in his estimate of men, and that fact alone would have marked him as destined to take a high rank; but he exceeded his senior's expectations and rapidly became one of the foremost surgeons of the country.

Dr. Sands's most striking characteristic was the lightning-like rapidity and invariable accuracy of his thought and speech. His talk was rapid, but never diffuse; it was rather epigrammatic. To persons who knew him only slightly he seemed cold, but his intimates were well aware of the depth of feeling of which he was capable. He was not a man of merely scientific attributes; his appreciation of art, especially of music, was keen, and his taste was of the highest. As a writer he was singularly clear and correct, and it is to be regretted that he did not oftener contribute to the literature of the profession. We may feel sure that it was his intention to do so when he had got rid of the public appointments that made such inroads

on his time, but he had barely accomplished this when death suddenly overtook him. It is not easy to estimate the loss to medicine entailed by the death of such a man.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of October 4, 1888.

The President, Dr. A. JACOBI, in the Chair.

A PAPER giving the conclusions reached at the recent congress at Paris for the study of tuberculosis was read by Dr. R. C. M. PAGE.

The PRESIDENT read a report on the last meeting of the British Medical Association. Many of the very valuable papers which were read before that body, he said, had already been published and were familiar to American physicians, but he wished to commend to those present for a careful perusal the address read by the president of the association. He thought the value of such general meetings of all orders of physicians should not be lost sight of. It was of advantage that men highest in the profession should meet in special societies of their own. There were other advantages connected with the association of the very best with the quite good men.

Remarks on the Diagnosis of Diseases of the Liver and the Fever accompanying Biliary Obstruction.—Dr. E. G. JANEWAY read a paper with this title (to be published hereafter).

Dr. ALFRED L. LOOMIS said that in his own experience fever was always present with multiple abscess, but chronic simple abscesses might run their course without fever.

The PRESIDENT, reviewing Dr. Janeway's points about the size of the liver as bearing on diagnosis, spoke of conditions in which the liver was only apparently increased or decreased in size. Could we say always that a rachitic child had an enlarged spleen or liver from mere palpation? Grave mistakes were often thus made, and in several ways this happened. First it must be remembered that the spleen and liver were proportionately large in children. In the next place, they might sometimes be enlarged owing to defect in heart power, with very low blood-pressure, or to relatively large arteries and a small heart, producing lowered pressure. In either case passive congestion would cause a swelling in the glandular structures. As a third cause of apparent enlargement there might be an abnormal formation of the chest, such as the falling in of the lower border of the ribs, which made the liver bulge downward and appear larger. Other causes were a misplaced liver where its lower border was an unnatural distance below or above the free margin of the ribs; an inflation of the intestines, lifting the liver out of place; the pressure of a tumor from behind, causing it to bulge; and rarely a dislocation.

He also proposed the question: "How often is it impossible to make a diagnosis when cirrhosis of the liver is present by simply finding the liver contracted?" or rather, "How often does hæmorrhage or hæmatemesis occur from cirrhosis when as yet no shrinkage of the liver has occurred?" He thought it occurred in cases where hæmorrhage took place early. The changes in the liver might be far advanced and lead to hæmatemesis before the organ began to contract and before ascites appeared. He was in doubt as to whether early hæmorrhages ever interfered with the enlargement of the liver and spleen.

Dr. JANEWAY replied that according to his experience large hæmorrhages might occur when the liver was enlarged or of

medium size, but that, as the patient was apt to die soon after, the relation of the hæmorrhage to the subsequent size of the liver could not be followed. Still, he had noticed that many small hæmorrhages, or a single large one, sometimes kept the spleen from enlarging.

Dr. LOOMIS remarked on the great breadth of the subject. One fact had always impressed him, since great mistakes had occurred through not keeping it in mind—namely, that things outside the liver told as much of its condition as direct examination of that viscus. Thus, multiple abscess had general signs, when neither size, contour, nor the exploring needle revealed anything. As to determination of size, great experience, care, and many examinations were needed to make it correctly. Often at autopsies displacements were found where an external examination would have led one to suppose the organ greatly diminished in size. Then the ætiology should be made out as nearly as possible, and the history of the patient studied from the beginning. It should be ascertained to what extent alcohol had been used, whether there had been exposure to malaria, and whether syphilis or fatty liver was likely to be present, from a consideration of the patient's general habits. He had seen hæmatemesis reduce the size of the liver and spleen.

The PRESIDENT then invited discussion as to the relative frequency of abscesses in the right and in the left lobes of the liver.

Dr. JANEWAY was of the opinion that four fifths or more of the single abscesses were in the right lobe.

Dr. LOOMIS had found most by far in the right lobe.

The PRESIDENT had seen but very few in the left lobe.

Dr. JANEWAY said he had had two cases of abscess in the left lobe under observation at the same time. They did sometimes occur.

Dr. LOOMIS, referring to the occurrence of catarrh of the bile-ducts with obstruction and fever, said it was not uncommon. He had always considered the fever independent of the other symptoms, while the jaundice and obstruction were comparatively accidental. The fever rather ushered in and perhaps led to the biliary symptoms.

Members were notified that at the next meeting a resolution would be offered looking to the purchase of a site for a larger building in the near future, as opportunities in that direction became scarcer each year.

MEDICAL SOCIETY OF VIRGINIA.

Nineteenth Annual Meeting, held at Norfolk, on Tuesday, Wednesday, Thursday, and Friday, October 23, 24, 25, and 26, 1888.

The President, Dr. BENJAMIN BLACKFORD, of Lynchburg, in the Chair;

Dr. LANDON B. EDWARDS, of Richmond, Recording Secretary.

The session was opened with prayer by the Rev. Dr. TUDOR, of Norfolk.

The Address of Welcome was delivered by Dr. H. M. NASH, of Norfolk, who welcomed the society on behalf of the "Twin Cities" of Norfolk and Portsmouth.

Moses and other Doctors was the subject of the annual address to the public and the profession, by Dr. WILLIAM T. WALKER, of Lynchburg, which went to show that preventive medicine was not only the medicine of the future, as was being maintained, but had been the medicine of the past.

Changes in Membership.—The recording secretary reported that during the year just ended thirteen fellows of the society had died, and two had resigned fellowship because of removal of residences to distant States.

The Medical Examining Board.—DR. W. W. PARKER, of Richmond, chairman of the executive committee, reported that Dr. James Parrish, of Portsmouth, had been duly appointed by the Governor to fill the vacancy caused by the resignation of Dr. L. Lankford, now of Norfolk, Va.

Amendments to the Constitution.—The constitution of the society was so amended as to permit those who had received certificates of satisfactory examination, etc., by the Medical Examining Board of Virginia to become fellows of the society, whether graduates of colleges or not—always implying that the applicants for fellowship were of the white race.

Report of the Committee appointed by the Joint Committees of the Medical Examining Board of Virginia and the Medical Society of Virginia during its Last Annual Session to Petition the Legislature of Virginia to Amend the then Existing Law.—DR. THOMAS J. MOORE, of Richmond, presented the report. The committee had succeeded in securing amendments in the two important particulars as follows:

1. All applicants for license to practice medicine in Virginia were now required to stand satisfactory examinations before the Medical Examining Board of Virginia *in session*; or,

2. In exceptional instances, for sufficient reasons to be decided upon as such by the president of the board, applicants might be granted permission to stand examinations before a committee of three members of the board—the committee to hold the examinations *only in a session*, and not individually as formerly.

The President's Address.—THE PRESIDENT announced as his subject "The Progress of Medical Education and the Importance of the Study of the Physical Sciences in Relation thereto during School Life."

Atypical Forms of Typhoid Fever was the subject for general discussion, which was opened by Dr. WILLIAM C. DABNEY, of the University of Virginia. He took the ground that the disease had become distinctly milder of late years, and that the symptoms, such as diarrhœa, eruption, and the *gradual* rise of temperature, which were formerly considered characteristic, were now often absent. That these cases were genuine typhoid fever he considered proved by the following well-established facts: 1. The cases usually presented some of the peculiar characteristics of the disease. 2. Hæmorrhage from the bowels occasionally occurred in these cases. 3. The intestinal lesions characteristic of typhoid fever had been found on post-mortem examination. 4. These mild cases were capable of originating epidemics of typical character. The conclusions at which he arrived were as follows: 1. That the disease in this country was gradually becoming milder, and that symptoms which were formerly thought to be characteristic and almost invariable were now much less frequently present. 2. That the diagnosis of the disease was often attended with extreme difficulty, and in the early stages was impossible. 3. That in those cases which were apparently extremely mild dangerous symptoms might arise suddenly, and a fatal issue might ensue from errors in diet or other imprudence. 4. That in all doubtful cases precautions should be taken to prevent the spread of the infective principle or germ, and to guard the patient against dangers from imprudence. 5. That the dangers to be especially apprehended in these cases were exhausting diarrhœa, hæmorrhage, and perforation of the bowel. 6. That, in view of this danger, patients should be placed upon liquid diet, should be confined to bed, and constipation, when present, should be relieved by enemata, and not by purgatives, even of the mildest character.

Dr. JOHN H. CLAIBORNE, of Petersburg, had prepared a paper to be read in the discussion, of which the following is an abstract: The title of the subject under discussion presupposed, of course,

that there was a *typical* or representative form of typhoid fever. Such a case should show, some time during its course, symptoms of stupor, or at least dullness of intellect or hebetude, a muttering or passive rather than an active delirium; there should be a certain form of diarrhœa, a peculiar but pathognomonic rose-colored eruption on or about the fourteenth day, and epistaxis, ordinarily slight. The fever was, to a certain extent, self-limited, and was perhaps mildly infectious; it generally attacked adolescents of both sexes, had its own recognized microbe, and, above all, a post-mortem should disclose, unquestionably and distinctly, infiltration or ulceration of the glands of Peyer. To these general symptoms might perhaps be added slight bronchitis, headache, anorexia, flushing of the cheeks, and a temperature progressively rising and subsiding.

The question now arose, How many and which of these pathognomonic symptoms or lesions could be eliminated from a typical case to leave an unquestionable case of atypical typhoid fever—a recognizable entity? Or, if we were not in danger of multiplying words, were we not in danger of multiplying diseases to the confusion of diagnosis?

There was a summer and autumnal fever common to many sections which it had become fashionable to note as *typho-malarial fever*—a term originated by the late Dr. J. J. Woodward, of the United States Army, during the late war. Ten years later, however, he had confessed himself mistaken as to his original idea that it was a substantive fever having its own symptoms and its own pathological lesions; yet the name had never perished, and there was no special objection to its use so long as the facts connected with its history were remembered. Wherever there was malaria (which seemed to be ubiquitous) there was typho-malarial fever. Dr. Cutter had published, in parallel columns, the diagnostic marks of typhoid fever and the so-called typho-malarial fever, which threw good light on the present question, and placed the atypical form of typhoid fever where it of right belonged—namely, in the class of ordinary bilious remittent fever. Remittent or any other fever might assume, under certain unsanitary or depressing influences, a typhoid character; but that did not constitute it the peculiar intestinal, or enteric, or typhoid fever of Louis, of Gerhard, or of Wood; nor was there any blending of the two forms—any swapping or coincident or concurrent cultivation of the microbes peculiar to each. Besides, the early, honest, and judicious administration (but not in pill nor in capsule form) of quinine usually cut short an attack of typho-malarial fever, which it did not do in typhoid fever. A mild mercurial every night, guarded or not with opium, according to the condition of the bowels, and from a scruple to half a drachm of quinine sulphate at the period of remission, with fifteen grains of acetanilide or twice as much antipyrine, in three doses, at the period of exacerbation, would ordinarily cut short the hybrid fever in from five to ten days.

Dr. W. G. ROGERS, of Charlottesville, presented a paper tending to strengthen existing evidence that drinking polluted water was a common cause of typhoid fever. Since the establishment of the Charlottesville Water-works, supplied by pure mountain streams, the disease had almost entirely disappeared from his city; and the cause of the few cases that had lately occurred could be easily traced to the drinking of water of wells dug at points where they necessarily received the percolations of surface sewerage, etc. Among these few cases he detailed reports of several *atypical* cases of typhoid fever. A boy ten years old had all the usual signs and symptoms except fever itself, the temperature being even subnormal—from 96° to 98°—and his pulse varied from 48 to 50 only for three weeks, and then became normal in frequency, as he got well in about six weeks. He had two other slow-pulse cases in sisters twelve

and fourteen years old, and no other symptoms, the diagnosis being made by the occurrence of typical cases in the same house at the same time, due to drinking polluted well-water. Another girl, aged seventeen years, had her highest temperature (106°) in the morning, the evening showing only about 104° . He also reported a case of typhoid fever with marked uræmic symptoms, which was relieved by jaborandi.

Dr. S. K. JACKSON, of Norfolk, commenced his paper by reminding the society that about fifteen years ago he had presented a paper entitled "Some Points in the Pathology of Typhoid Fever which furnish Indications of Treatment," in which he proposed a new treatment differing entirely from the usual line of treatment. As the society was likely to feel some interest in a suggestion first made on this floor, he thought it due to them to be kept informed of its history, its growth, and the changes it had undergone. His object was now to fulfill this obligation, and also to comment upon a modification which had been proposed by Dr. J. R. Barnett, of Wisconsin—viz., the substitution of ammonium salicylate for those salts of that base which he had used satisfactorily for a number of years. He denounced the professors of the medical colleges for not pronouncing upon so revolutionary a treatment as to whether it contained anything of value or whether it was worthless and should be condemned. He maintained that the carbon compounds were only efficacious in fevers of malarial origin, and were of value in these in direct proportion to the number of carbon atoms they severally contained; and he still insisted that typhoid fever required the ammoniacal salts to repair the nitrogenous waste. But at the same time he acknowledged the value of ammonium salicylate (which might be called a hybrid salt) in that hybrid form of fever which he called "typho-malarial."

Dr. LEWIS G. PEDIGO, of Roanoke, stated that he had found great difficulty in diagnosing some cases of fever recently occurring in his section; but they were finally recognized as atypical forms of typhoid fever, the peculiarity consisting chiefly in the high temperature from the very commencement of the attack. It was the form of cardiac typhoid fever spoken of in some of the books, in which there was early failure of the heart. There was great difficulty in controlling the temperature throughout the attack, especially during the latter stages, and the disease ran a very rapid and generally fatal course. The difficulty of diagnosis was chiefly between cardiac typhoid fever and a type of continued malarial fever occurring in some localities, mostly about the mountain regions. Even in these malarial types, as also in typhoid fever, quinine did harm. It certainly should not be given in larger quantities than about five grains in twenty-four hours. From the onset to the decadence of the fever, hydrochloric acid should be given in repeated doses each day. Antipyrine was also useful, and when he associated the acid with antipyrine he thought he had made the best therapeutic combination.

Dr. JOHN H. NEFF, of Harrisonburg, said that he could confirm what had been so well expressed by Dr. Dabney, though their fields of observation were different. During the past summer he had seen many cases of atypical typhoid fever, like those described by Dr. Dabney. There was some difference of opinion expressed in his vicinity as to the nature of these cases, one observer holding that they were malarial. He did not believe there was a malarial miasm in Harrisonburg. Early recognition of these cases was very important. Treatment consisted in absolute rest and diet, individualizing each case. He thought typho-malarial fever a misnomer. We might as well say "pneumonia malarial," "dysentery-malarial," etc. Environment modified all diseases. He could not indorse Dr. Jackson's ammonia treatment, and he did not believe in any specific for the disease. In answer to a question by Dr. S. K. Jackson, Dr.

Neff stated that he had been using the nitrate-of-ammonium treatment, etc., advocated by Dr. Jackson, for a few months, sufficiently long to persuade him not to depend upon it in the future.

Dr. C. T. LEWIS, of Clifton Forge, read a paper devoted principally to a new treatment of typhoid fever. He thought if he could keep the secretion of bile anywhere near its normal quantity and condition, the disease would run a mild and favorable course, because the bile would destroy or prevent the germs of typhoid fever from finding lodgment in the intestinal canal, or would remove or destroy them if reached. Mercury, in some form, was about the best and most commonly used cholagogue. Mercuric chloride was especially recommended on the ground that it neutralized the toxic product of the disease-germs without destroying the animals themselves, and acted most decidedly upon the liver as a cholagogue. The bile flowed into the bowel and acted as a germicide and antiseptic. But, after a while, the continuous use of mercury brought out its own poisonous effects upon the human system, depressing especially the nervous forces, so as finally to bring about a typhoidal condition. It might even cause diphtheritic ulcerations of the intestines, upon which podophyllin, rhubarb, jalap, euonymin, etc., produced a uniform bile secretion, but they irritated the bowels; they were purgatives as well as cholagogues. Ox-bile—theoretically suggested as the correct drug—had been practically tried, but failed to accomplish what was wanted of it. After careful consideration of all the facts, the author now adopted the following plan of treatment: At intervals of two hours give three doses, but not more, of a powder composed of two grains of calomel and one of rhubarb. After this, throughout the whole course of the disease, night and day, give ten drops of dilute nitro-hydrochloric acid in a wineglass of water every two hours. Also give a quarter glass of fresh milk every three hours, night and day. If the acid and milk come at the same hour, give the acid first, as it gets out of the stomach sooner than the milk. If the patient becomes restless at night, give two grains of Dover's powder every two hours, beginning about two o'clock in the afternoon, until four doses and no more are administered. If the fever rises above 103° , bathe the shoulders, upper part of the chest, neck, and arms in cold water every twenty minutes, with a basin of cold water by each side of the patient for his hands to play in, and cloths wet with the same cold water are laid around the neck and bowels. The result of this plan was that, of one hundred and eighty cases so treated by the speaker, only four deaths had occurred, and these deaths had been the results of preventable causes by the patients themselves. Solid food should not be allowed until the patient was well convalescent.

Dr. ALBAN S. PAYNE, of Markham, differed totally with Dr. Lewis. The old treatment of Dr. George B. Wood was the best. If Peyer's patches were ulcerated, nitro-hydrochloric acid would do them injury as an irritant in such a fever.

Dr. GEORGE T. WALKER, of Vinton, asked if it was a sufficient length of time to allow two days after the fever left before letting the patient take any solid food? Dr. Lewis replied that two days was ordinarily long enough. Then he began by giving a small Irish potato and a little light bread.

Dr. WILLIAM W. PARKER, of Richmond, gave a little chicken soup as soon as possible. It was easily digested, was nutritious, and was not irritant to the inflamed ileo-cæcal region of the bowels.

In reply to a question by Dr. Wiley, of Abingdon, Dr. Lewis stated that he had not used antipyretics during the course of the disease, except such as the cold-water bathing, to which he had referred.

Dr. NEFF said that he had no faith in any routine treatment

of typhoid fever. Early diagnosis was the most important thing. In many cases absolute rest, both mental and physical, absolute diet, proper hygienic surroundings, with good nursing, etc., would lead to recovery. Each case must be individualized, and treated according to its symptoms. Some patients could not take milk; in such cases give chicken and beef soup. Antipyrine, acetanilide, quinine, etc., often ameliorated the symptoms. Morphine often acted well in inducing sleep, easing pain, and lowering temperature. Observation showed that quinine was a good antipyretic, especially during the afternoon, and in many cases it did not irritate the stomach or depress the system, like antipyrine and antifebrine. Opium was also often an excellent antipyretic; but often-repeated sponging the body with cold water allowed us generally to dispense with antipyretics. Aperients were not indicated in any stage. Use enemata to relieve constipation. When hæmorrhage from the bowels occurred, give opium and enjoin perfect rest.

Dr. HENRY M. PATTERSON, of Staunton, described some cases of atypical typhoid fever which started off with high fever and headache. In such cases we must give some such remedy as antipyrine; quinine also acted well. If, however, the sudden high fever and headache were followed by a chill, the case was not one of typhoid fever, but a continued fever of another kind. In typical typhoid fever he had had good results from aconite as an antipyretic.

Dr. WILLIAM L. ROBINSON, of Danville, remarked that typhoid fever differed in its manifestations in different sections, being modified by malaria and hygienic surroundings. An uncomplicated case of typhoid fever, commencing with general malaise, moderate fever, dry tongue, quick, corded pulse, gradually increasing temperature, reaching its acme at the end of the second or third week, subsultus, tympanites, tenderness in the right iliac region, hot, dry skin, etc., required conservative management, such as moderate quantities of liquid diet, avoiding that excess which failed of digestion and produced fermentation and diarrhoea. Turpentine was a diffusible stimulant and anti-fermentative, like carbolic acid, in connection with tincture of iodine. High temperature produced changes in the blood and parenchymatous degenerations, which weakened the muscular power of the heart. Antipyrine, in moderate doses, quieted the nervous system, reduced temperature, and did much less harm than continued high temperature. The rectal use of digitalis, opium, and whisky well sustained the flagging circulation. The use of alcohols in fevers, recommended by Flint in his paper before the International Medical Congress, was fully indorsed. He believed in guarding the stomach, and guiding the patient through the attack. He could not concur with Dr. Lewis in using ten drops of nitro-hydrochloric acid every two hours, and a quarter of a glass of milk as often, because in such quantities it would produce irritation of the alimentary canal, coagulate the milk, and cause fermentation and gas. While it might be admitted that nitro-hydrochloric acid, in proper proportions, aided the digestion of milk, yet, in the quantities named by Dr. Lewis, it would produce the results referred to. The pathological condition of the alimentary canal in typhoid fever implied ulcerative and inflammatory conditions, and it was a well-known fact that, even in ordinary ulceration of the stomach, an absolute alkaline condition offered the only redress. Such an amount of acid as was suggested, he therefore thought, was irrational. Be slow in accepting a limited number of cases as proof of the efficacy of any line of treatment, said the speaker, for the epidemic may have been of a mild type. He believed that ten drops of nitro-hydrochloric acid every two hours, and a quarter-glass of sweet milk as often, would, if persistently used, put a healthy man in bed in twenty-four hours. He was convinced that the form of fever which presented excessively high temperature in

the beginning, with a clean tongue, a pulse not exceeding 100 in a minute, good digestion, no diarrhoea, no tympanites, etc., would be materially modified by quinine, because malaria was the complication.

Dr. HUGH T. NELSON, of Charlottesville, said he had received his medical education in Piedmont, Virginia. At that time typhoid fever had been considered the fever of that section. When he had settled in another part, where malarial diseases were common, he had frequently thought he saw cases of typhoid or enteric fever. Subsequently, on removal to Charlottesville, he had seen a good many cases of continued fever, some of which had resembled the cases he had seen in the lower country, while other cases had differed from them in many particulars. The important point was to decide, in any given case, whether or not the continued fever present had its starting-point in irritation and subsequent inflammation of the intestinal glands. Unless this point could be determined, there was no certainty that we had a case of typhoid fever. Hæmorrhage from the bowels occurred by passive congestion in cases of fever in which, though the intestinal glands showed congestion also, there was no ulceration, and no actually acute inflammatory condition. In another class of cases of continued fever the hæmorrhage, when occurring, occurred by an acute inflammatory process, which destroyed the previously much enlarged intestinal glands and the blood-vessels supplying them, the general mucous surface of the bowel remaining intact, or else only showing slight active congestion, evidently secondary to that occurring in the glands. He believed this to be the characteristic form of hæmorrhage in typhoid fever. Many cases were no doubt put into the category of typical cases of this typhoid fever that did not properly belong there. The importance of diagnosis could not be overestimated in the study of continued fevers, so that proper treatment might be adopted.

Dr. PEDIGO objected to certain doctrines laid down by Dr. Robinson. The great effort now being made to arrive at a specific treatment of typhoid fever would finally bring about a tangible result. The trend of medical thought and medical practice in this connection was toward the chlorine group. He believed that the proper use of some member of this group of germicides would ultimately furnish the key to the solution of the great problem. He criticised Dr. Robinson's objection to the acid treatment by suggesting that hydrochloric acid was an important agent in the process of digestion, and, so far from aggravating the already existing irritation of the alimentary canal, had a tendency to relieve such irritation by preventing fermentation, which produced the irritating agents.

Dr. C. T. LEWIS did not believe that nitric acid prevented putrefaction.

Dr. L. B. ANDERSON, of Norfolk, remarked that all the speakers had seemed to assume that bacteria were pathological factors, whereas they never had been and could never be such. They were of vegetable and not of animal origin. He had never seen any signs of life in any vegetable or animal matter, or laudable pus from anthrax, furuncle, abscess, or gonorrhoea until it had been exposed to the air under suitable temperature—until, in short, fermentation or putrefaction had developed. Bacteria, therefore, were a product and not a cause of fermentation or putrefaction. We should rather look upon bacteria as the best friends the doctor had for preserving health.

Prostatic Enlargement.—In response to calls from the members of the society, Dr. HUNTER MCGUIRE, of Richmond, made some impromptu remarks on this subject. He spoke at length on the pathology, causes, and symptoms of the condition for the relief of which he had devised a new operation which was very similar to suprapubic cystotomy for stone. The only difference was that he made the opening into the bladder as low

down on its anterior wall as possible, and left the opening in the skin at the upper end of the incision. A drainage tube was kept in for a short time. The result was that the patient passed his urine through the artificial urethra thus formed. The speaker had been led to perform this operation by a study of the mechanism of urination. The artificial urethra did not leak nor did urine dribble away, no matter what the position of the man's body. The urine was retained for several hours, often from four to six, and then passed in a steady stream thrown several feet from the body, the last coming in jets as from the natural outlet. The improvement in the patients upon whom he had done this operation had been very wonderful. The artificial urethra, or fistula, had the same relation to the bladder that the spout of a coffee-pot had to the pot.

Report of the Secretary of the Medical Examining Board.—Dr. HUGH T. NELSON, of Charlottesville, presented his report covering the period from the organization of the board, on November 15, 1884, to October 9, 1888. This board (which was proving so invaluable in Virginia in lifting the standard of medical education and by direct reflex elevating the standard of graduation of medical colleges who sent their graduates to Virginia) was composed of thirty-two members of the regular profession—three from each of the ten Congressional Districts of the State and two from the State at large—nominated to the Governor for a term of four years. The Governor could not appoint any one of these thirty-two unless he was nominated by the Medical Society of Virginia, except when the society failed for ninety days to make a nomination. Hence this part of the board was selected by the regular profession of the State, regardless of political complexion or personal favoritism of an appointing officer, and it was therefore composed of representative *doctors*—not politicians—who had solely professional interests at stake. In addition, by enactment of the Legislature, in 1886, five homœopathic practitioners, nominated by the Old Dominion Hahnemann Society, were added to the board—making a total of thirty-seven members.

The board, having full power to direct its own plan of examinations, etc., was divided into eight sections, as follows: Chemistry, anatomy, hygiene and medical jurisprudence, physiology, materia medica and therapeutics, obstetrics—including diseases of women and children—practice of medicine, and surgery. Four different members of the thirty-two representatives of the regular profession were assigned to take charge of each of these sections, and the five homœopaths were assigned, respectively, one to each of the following five sections: hygiene and medical jurisprudence, materia medica and therapeutics, obstetrics, etc., practice of medicine, and surgery.

Each committee prepared and reported the questions selected for its section to the board in session just prior to the examinations, and they were not made known to any of the candidates for examination until the examination began. Each question reported by the section to the board in session was investigated by the board and approved or disapproved—those questions disapproved being remanded back to the appropriate committee for revision or substitution. Written examinations were required, and the necessary standard for each applicant to attain was 75 per cent. on all eight—taken as a whole; but if any one fell below 33½ per cent. on any one section, although he might aggregate enough on all other examinations to attain an average of 75 per cent., that applicant was not granted a certificate. This provision was demonstrated to be a necessity by the fact that some candidates scarcely made an effort to answer the questions of one or the other section—trusting to aggregate 75 per cent. on the remaining seven branches.

Every applicant for license to practice medicine, etc., in Virginia, since January 1, 1885, who had not previously been

licensed, had had to pass a satisfactory examination before this board *in session* before he could practice in this State; nor was the examination a formality. A so-called resident physician—but a resident of another State—at one of the Virginia springs during the past summer was now under bond to appear before the October term of the Shenandoah County Court for presuming that it was a formality, and asking by letter for some special arrangement to be made for him to continue practice at the springs, instead of submitting to the examination before the board. There was no reason why physicians from other States should be granted exemptions from the operations of the Virginia law not accorded to citizens of the State. Steps were being taken to bring to justice two other doctors practicing medicine in Virginia without having yet presented themselves for examination by the State Board—one in Powhatan County and the other in Goochland County.

Two candidates rejected by the board as not passing satisfactory examinations had entered on professional work in their respective counties in defiance of the law. Both had been duly indicted and punished by their courts. One of the cases had been carried to the Court of Appeals of Virginia, which court had sustained the board in every point in which its constitutionality had been attacked by the defendants.

The following is a tabular statement of work done by the Medical Examining Board of Virginia from the date the law went into operation (January 1, 1885) through the date of the foregoing report (October 9, 1888):

Institutions represented before the Medical Examining Board of Virginia.	Total number of applicants from each.	Total rejections from each.	Certificates issued by Med. Exam. Bd. of Va.	No. rejections making second applications.	Second rejections.	Certificates issued on second application.	Incomplete exams. by withdrawal or otherwise
Medical College of Virginia.	57 8	48 3	...	3	1		
University of Virginia, Med. Department.	33 1	32					
College of Physicians & Surg., Balt., Md.	34 10	24 6	2	4			
University of Maryland, Med. Dep., Balto.	34 9	25 3	1	2			
Jefferson Medical College, Phila., Pa. . . .	12 3	9 2	...	2			
University of Pennsylvania, Phila., Pa. . .	2 . . .	2					
Bellevue Hospital Medical College, N. Y.	6 1	5 1	...	1			
Univ. of City of New York, Med. Dept. . .	7 2	5 1	1				
College of Physicians and Surgeons, N. Y.	3 . . .	3					
Louisville Medical College, Ky.	2 1	1					
Hospital Medical College, Louisville, Ky.	3 . . .	3					
Kentucky School of Medicine, Louisville.	2 . . .	2					
University of Louisville, Ky.	1 . . .	1					
Med. Dept., Univ. of Tennessee, Nashville	1 . . .	1					
Vanderbilt University, Med. Dept., Tenn.	3 1	2 1	..	1			
Detroit Medical College, Mich.	2 1	1 1	...	1			
University of Michigan, Ann Arbor. . . .	1 . . .	1					
St. Louis Medical College, Mo.	1 . . .	1					
Columbus Medical College, Ohio.	3 2	1 1	...	1			
Cincinnati Medical College, Ohio.	1 1	1					
Med. Dept., Howard Univ., Wash'ton, D. C.	7 6	1 4	4				
Leonard Medical College, Raleigh, N. C. .	3 1	2					
Med. Dept., University, Georgetown, D. C.	1 . . .	1					
Hahnemann Homœop. Med. Coll., Phila. .	2 . . .	2					
Medico-chirurgical College, Phila., Pa. . .	3 3	...	2	2			
Geneva Medical College, New York. . . .	1 . . .	1					
Heidelberg, Germany.	1 . . .	1					
Baltimore Medical College, Md.	1 . . .	...	...	1			
Colleges unknown.	4 . . .	3	...	1			
Non-graduates.	11 4	5	...	2			
Cleveland Homœopathic Hosp. Coll., Ohio.	1 . . .	1					
Total number of examinations *	240 54	181 25	10	15	5		

No. of applicants examined by—

(a) Individual examiners out of session, 117.

(b) Board in session, 123.

* The first and third columns add up 243 and 184, respectively; but three of the applicants each gave two colleges of graduation.

Officers for the Ensuing Year.—The following officers were elected by ballot: President, Dr. E. W. Row, of Orange Court-house; vice-presidents, Dr. William C. Christian, of Urbanna, Dr. George S. Luck, of Roanoke, and Dr. L. Ashton, of Falmouth; recording secretary, Dr. Landon B. Edwards, of Richmond; corresponding secretary, Dr. J. F. Winn, of Richmond; treasurer, Dr. Richard T. Styll, of Hollins, Roanoke County. Committee on applications for fellowship at annual session, 1889, Dr. William D. Turner, of Fergusson's Wharf, Dr. R. M. Slaughter, of Theological Seminary, Dr. I. S. Stone, of Lincoln, Dr. Alfred S. Rixey, of Culpeper, and Dr. John Clopton, of Williamsburg. Executive committee, Dr. William W. Parker, of Richmond, Hon. Fellow Dr. J. Herbert Claiborne, of Petersburg, Dr. Jacob Michaux, of Richmond, Dr. L. Lankford, of Norfolk, and Hon. Fellow Dr. Hunter McGuire, of Richmond. The recording secretary and the treasurer are *ex-officio* members. Committee on publications, Dr. C. W. P. Brock, Dr. George Ross, and Dr. Hugh M. Taylor, each of Richmond, Va. The recording secretary and treasurer are *ex-officio* members. Necrological committee, Hon. Fellow Dr. J. Edgar Chancellor, of University of Virginia, chairman. To deliver the annual address to the public and profession, session 1889, Dr. Thomas J. Moore, of Richmond. Croupous pneumonia was named as the subject for general discussion at the annual session, 1889; Dr. B. L. Winston, of Hanover Court-house, was chosen to open the discussion.

The next meeting will be held at Roanoke about September 3d, the exact day to be definitely fixed and announced by the executive committee some months hence.

The next order of business being the nomination to the Governor of members of the medical examining board of Virginia to serve for the regular term of four years, beginning January 1, 1889, Hon. Fellow Dr. J. Edgar Chancellor, of the University of Virginia, introduced the following resolution:

Resolved, That the Medical Society of Virginia, desirous of showing its appreciation of the work performed by the Medical Examining Board of Virginia for the term of four years, to terminate December 31, 1888, nominate each of the thirty-two regular physicians now representing this society on that board, and recommend to the Governor of Virginia to issue commissions in due form to each of those so nominated to serve for the regular term of four years, beginning January 1, 1889, as members of that board.

The resolution was unanimously adopted. Hence the following are the thirty-two gentlemen of the regular profession who are to compose the Board of Medical Examiners of Virginia for the term of four years, beginning January 1, 1889:

State at Large.—Dr. T. J. Moore, Richmond; Dr. I. S. Stone, Lincoln.

First Congressional District.—Dr. S. W. Carmichael, Fredericksburg; Dr. O. B. Finney, Onancock; Dr. W. W. Douglas, Warsaw.

Second Congressional District.—Dr. Jesse H. Peek, Hampton; Dr. Herbert M. Nash, Norfolk; Dr. James Parrish, Portsmouth.

Third Congressional District.—Dr. R. A. Lewis, Richmond; Dr. C. R. Cullen, Richmond; Dr. Hugh M. Taylor, Richmond.

Fourth Congressional District.—Dr. J. Herbert Claiborne, Petersburg; Dr. W. J. Harris, Blackstone; Dr. Hugh Stockdell, Petersburg.

Fifth Congressional District.—Dr. Rawley W. Martin, Chatham; Dr. W. L. Robinson, Danville; Dr. T. B. Greer, Rocky Mount.

Sixth Congressional District.—Dr. H. Grey Latham, Lynchburg; Dr. A. Trent Clarke, South Boston; Dr. Oscar Wiley, Salem.

Seventh Congressional District.—Dr. William P. McGuire, Winchester; Dr. J. H. Neff, Harrisonburg; Dr. Hugh T. Nelson, Charlottesville.

Eighth Congressional District.—Dr. C. C. Conway, Rapidan; Dr. Alexander Harris, Jeffersonston; Dr. Bedford Brown, Alexandria.

Ninth Congressional District.—Dr. Robert J. Preston, Marion; Dr. R. W. Huffard, Chatham Hill; Dr. S. W. Dickinson, Marion.

Tenth Congressional District.—Dr. Z. J. Walker, Brownsburg; Dr. H. M. Patterson, Staunton; Dr. G. D. Meriwether, Green Forest.

The Revision of the United States Pharmacopœia.—The corresponding secretary, Dr. JOHN F. WINN, of Richmond, presented a circular letter from the publishing committee having charge of the revision of the United States Pharmacopœia, requesting this society, in common with every other regular State medical organization, to appoint a committee of three to act with the publication committee of the American Pharmaceutical Association in perfecting the revision of the volume to be issued in 1890.

Dr. R. M. SLAUGHTER, of Theological Seminary, moved that the committee of three be appointed as requested. Carried. The president appointed Dr. R. M. Slaughter, Dr. William B. Towles, of the University of Virginia, and Dr. John W. Upshur, of Richmond.

Report of the Treasurer.—The treasurer, Dr. RICHARD T. STYLL, of Hollins, presented his report for the year just ended, showing a balance on hand of \$229.18.

Pathogenic Germs or Microbes, and Some Conditions Relating to Infection.—Instead of a formal "Report on Advances in Surgery," to which task Dr. WILLIAM EDWARD MCGUIRE, of Richmond, had been assigned, he read a paper on this subject. He said that the "pathogenic micrococci" of chief interest to the surgeon were those of open wounds, such, for instance, as the micrococcus of syphilis, gonorrhœa, acute infectious osteomyelitis, progressive necrosis, etc. The "pathogenic bacilli" were those of syphilis, tubercle, tetanus, anthrax, ulcerative stomatitis, etc. The baneful influences exerted by these organisms on living bodies had been explained in four ways: (1) Acting as an invading army, they destroyed the raw food of the weaker inhabitants (the tissue-cells), which required more complex bodies for their assimilation; or (2) they interfered with the due performance of the depurating organ, and produced disease by preventing the elimination of urea and other final products of repressive metamorphosis; or (3) as microbes, along with all living beings, produced excretion, and this excretion was discharged into the body of the animal in which the microbes lived, it would produce deleterious effects as certainly as if the animal's excretion had been retained; or (4), as was most generally accepted, the injurious effects produced by microbes was not due to what they took or excreted, but to what they left; and this was associated with the demand they made for the oxygen of the tissues. Living and multiplying without direct exposure to air, they obtained their required oxygen from the tissues by which they were surrounded; and when oxygen was withdrawn from such complex chemical compounds as our tissues were composed of, the elements entered into new and abnormal combinations (ptomaines) which were believed to be the really poisonous agents. Depression of vitality of the part attacked was an important factor in the process of infection. An essential condition in the production of local depression was inflammation. Practically, the micro-organisms entered the body in the first stage of inflammation. Much depended on the part of the body exposed to infection—some micro-organisms infecting only one part of the body, and others

another part. Pettenkofer believed that everything that increased the amount of water in the blood predisposed the individual to infectious diseases.

Reports in Anatomy and Physiology.—Dr. T. W. SIMMONS, chairman, of Union Hall, stated that he had nothing in anatomy to report. But in *physiology*, Dr. CHARLES M. BLACKFORD (who had removed to New York city) reported a *new corpuscle* which appeared in preparations of blood that had been allowed to stand for some time. This was smaller and more irregular in shape than the ordinary corpuscles and was thought to be fragments of leucocytes. Nothing of importance had recently come to view with regard to coagulation. The view now held was that the fibrin was formed by an action of a fibrin-forming ferment on fibrinogen without the addition of fibrinoplastin. Professor Osler held that the ferment might be furnished by the hæmatoblasts of Hayem. Ranvier stated that the red blood-corpuscles were developed from vaso-formative cells which he described and which he had studied in the omentum of a young rat. Under the head of digestion, Dr. Blackford gave the result of some researches of Dr. Sternberg's on the action of bacteria found in the mouth and of Pasteur on the same subject. He quoted Roger, of Paris, as saying that the liver destroyed the ptomaines formed by these bacteria and others found in other parts of the alimentary tract, and voiced an opinion of Lauder Brunton that the effects of jaundice might be due to the persistence of these ptomaines. A brief sketch was given of the protective mechanism of the digestive organs. The stomach was protected from self-digestion by the alkalinity of the blood, the pancreas by the fact that trypsin was not secreted as such by the pancreas, but as zymogen which became trypsin by union with oxygen when the small intestine was reached. The intestine was protected by the creamy layer of precipitated peptones bathing its villi. Under *neurology* the cerebral lesions were stated which gave rise to the singular condition of "soul-deafness," as it was called by Munk. A lesion in the first and second temporo-sphenoidal convolutions of the left side would destroy all power of understanding spoken language though it be heard. Words sounded like confused noises to patients so affected. A similar state affecting sight might be produced by a lesion in the cortex of the occipital lobe, as shown by Dr. Henry Hun, of Albany. Goltz, however, had failed to demonstrate the psycho-optic center in a dog, the same results following cortical injury in either the posterior or anterior portions. Details of experiments were given.

Reports in Chemistry, Pharmacy, Materia Medica, and Therapeutics.—The chairman, Dr. R. A. LEWIS, of Richmond, presented the report on chemistry, prepared by Dr. JOSEPH M. WHITFIELD, who had just removed from Virginia to New York. He stated that incompatibilities should be better known by physicians. Thus, iodol was incompatible with yellow oxide of mercury, and yet such a prescription for an ointment was often written. In a week's time the neat-looking, homogeneous ointment changed to a dirty-grayish mixture; the excess of iodine in the iodol was given off and decomposed the yellow mercuric oxide. Saccharin, or saccharinic acid, the sweetest of all known substances, belonged to the group of coal-tar products, and was antiseptic. It was maintained, also, that it acted directly on the fourth ventricle, and thereby diminished the amount of sugar produced in the system. It was a boon to diabetics having the proverbial "sweet tooth." It was dispensed in half-grain and one-grain tablets. One grain would make a cup of coffee too sweet for most persons. It combined readily with most alkaloids, such as quinine, morphine, cocaine, etc. As it prevented fermentation, it was used in gastric and intestinal disorders. Cocaine saccharinate was of about four fifths the strength of cocaine hydrochloride, but had no bitter

taste. Antipyrine and acetanilide were derived from anilide. Antipyrine was a proprietary drug, and cases of poisoning had resulted from its use, but no case had as yet occurred from acetanilide; nor did it interfere with the digestive tract, like antipyrine. Besides, its effects in smaller doses lasted longer, it stimulated rather than depressed the vaso-motor and muscular systems, it had no after-effects, and it was very much cheaper. Antipyrine was strongly recommended as a prompt hæmostatic, leaving the wound clean. Phthalates were salts formed by the action of the organic acid—phthalic acid—on vegetable alkaloids. The special advantages alleged for these salts were their great solubility and stability. Sulphonal, an oxidation product of ethyl-mercaptan with acetone, was tasteless and colorless, and crystallized in large tablets; it was easily soluble in two parts of water. It was hypnotic in doses of from gr. xx-xxx. Amylene hydrate, or dimethylethylcarbinol, was a tertiary amyllic alcohol, a clear liquid, having an ethereal odor and a camphor-like taste. It ranked between chloral and paraldehyde as a hypnotic. It was safer than chloral, as it did not depress the heart or respiratory centers, and had not the nauseous taste, nor did it cause the disagreeable eructations of paraldehyde. Urethane, or ethylurethane, produced sleep like normal sleep, left no headache or gastric disturbance, and only slightly slowed the pulse. It was soluble in water, and its taste was not unpleasant. Dose for infants from twelve to eighteen months old, about four grains. Menthol, or peppermint camphor, was a soluble crystalline substance looking like Epsom salts, deposited when Chinese oil of peppermint was exposed to cold, forming stearoptene of peppermint oil. It equaled thymol as an antiseptic, and hence its use in diphtheria, typhoid and scarlet fevers, etc.

After some notes about cocaine, jambul-seed was mentioned as a new remedy for diabetes mellitus. Dose of the fluid extract of the seed, from five to ten minims. Succinimide of mercury for hypodermic purposes seemed to be a valuable preparation. It was a white, silky powder, prepared by heating together ammonia and succinic anhydride, and then adding mercuric oxide. It was very soluble in water, and the solution was a permanent one. It was cheap.

Dr. H. ROLFE DUPUY, of Norfolk, read the "Report on Advances in Materia Medica and Therapeutics." In reviewing the literature on his subject during the past year, he called special attention to the two great antipyretics—antipyrine and acetanilide—showing their uses and abuses and the particular indications for each, maintaining for the latter the greatest and most varied use. Strophanthus was urged as the great heart tonic, particularly when used in connection with ether, and also with nux vomica. Attention was called to the great value of ichthyol in skin diseases and rheumatic pains. The literature about salicylate of ammonium was reviewed *in extenso* in connection with the treatment of typhoid and remittent fevers. Salol, sulphonal, sparteine, pichi, jambul, and other new remedies or preparations came in for their appropriate share of attention. In conclusion, he condemned the use by physicians of proprietary preparations which did not have attached to the description a working formula for the guidance of the pharmacist.

Ætiology of Pyrexia from the Standpoint of Modern Physics.—Dr. R. C. POWELL, of Alexandria, read a paper on this subject. He remarked that no theory based wholly on demonstrated science had yet been offered to explain the high temperature in pyrexial diseases. Any attempt to explain the phenomenon by a theory not in harmony with the laws of conservation of energy or correlation of forces was not worth consideration. After a full discussion of numerous theories, he presented the following as his conclusions: 1. The matter of the human body was identical with that of the world around

us, and the forces of the human body were the same as those of inorganic nature. This body, as a piece of mechanism, was more perfect than any other apparatus for the transformation and distribution of energy, with which it was supplied, but possessed no creative power. 2. The relation between combustion and heat was coincidental, and not causal. If heat was the result of collision between carbon atoms and oxygen atoms, this collision must precede that intimate union of such atoms which was termed combustion; and, as the effect could never precede the cause, heat could not possibly be the effect of combustion. 3. The oxidation of tissues *could not* be exaggerated by the presence of micro-organisms whose very existence was maintained by the *absorption* of oxygen from these tissues. 4. In all *essential fevers* the pyrexia was probably due to increased molecular motion. 5. The rapid waste of fatty tissue in fever was not so intimately connected with the production of heat as with the production of energy, some of which was manifested in the accelerated action of respiration and circulation. 6. In sympathetic pyrexia, heat was a form of energy, which, by reason of traumatic lesions of the nervous system, was prohibited from expending itself in functional activity or motion, and was therefore transmuted into heat, which was the form most frequently assumed by transmutable energy. 7. The only rational way to treat an essential fever was to destroy the cause of it; but for agents to accomplish this destruction, no enthusiastic search would be made until we repudiated the idea that the great object in the treatment of fever was to place the system in the most favorable condition for recuperation after the disease should have run its course.

Antagonism between Amyl Nitrite and Prussic Acid.—

Dr. LEWIS G. PEDIGO, of Roanoke city, read a paper thus entitled. After certain preliminaries he gave an account of three representative experiments, out of a series that he had performed on lower animals, illustrating the use of amyl nitrite by inhalation as a treatment for prussic-acid poisoning. The experiments consisted in administering the poison in large doses, hypodermically, and beginning the use of the antidote at once by inhalation. Collateral experiments were reviewed in which the poison was given in equal or smaller doses, and the antidote withheld. The effects were observed and compared, always showing a remarkably heavy balance in favor of the remedy. In one of these experiments a dog's life was saved by the use of the nitrite of amyl from the action of the same dose which had just killed a similar dog in five minutes and fifteen seconds without treatment. In commenting on the experiments, a theory was evolved to explain the action and antagonism of the two drugs. The convulsions and arterial spasm of prussic-acid poisoning were attributed to paralysis of inhibitory nerve centers. The relief of these symptoms by nitrite of amyl was accounted for on the supposition that this drug stimulated those centers. The two drugs were shown to antagonize each other in six distinct physiological items, thus proving the amyl to be a more nearly perfect physiological antidote to Prussic acid than was known for any other poison. He suggested the use of the same remedy in cases of poisoning by other cardiac depressants, and enumerated aconite, veratrum viride, and gelsemium.

(To be concluded.)

NEW YORK SURGICAL SOCIETY.

Meeting of October 10, 1888.

The President, Dr. LEWIS A. STIMSON, in the Chair.

Colo-colostomy for Cancerous Stricture of the Ascending Colon.—Dr. WILLY MEYER presented a patient with the following history: The patient was a woman, aged thirty-three, who

had borne three children. In January she had a miscarriage, a few weeks after which she was suddenly attacked with pain in the abdomen, accompanied with constipation and vomiting. Other similar attacks followed. She entered the medical division of the German Hospital on March 28th, where she was treated for chronic intestinal catarrh, and improved. She left the hospital the middle of May feeling somewhat better, but two days later she had another attack of abdominal pain, and showed evidences of intestinal obstruction (ileus), and also had a bloody stool. She re-entered the hospital and improved, but continued to lose flesh. She was examined under ether, and a hard, uneven mass was felt in the right hypogastric region, from which a firm cord could be traced, extending downward parallel with Poupart's ligament. The patient was transferred to the surgical division, and laparotomy was performed July 2d. An incision was made to the right side of and parallel with the linea alba, and after opening the abdomen a cancerous mass, situated at a point a little above the hepatic flexure of the colon, was easily pulled in front of the abdominal wall. There were many secondary growths in the ascending portion. As it was impossible to resect the whole diseased portion of the gut, the question arose whether to make an artificial anus at the lowest portion of the ileum, or to do entero- or colo-colostomy. The speaker decided to perform the latter operation. Two portions of the colon—one above (the ascending colon), the other below the tumor (the transverse colon)—were surrounded by temporary ligatures, the isolated portions having been emptied of their contents before by squeezing them with the fingers. Then longitudinal incisions were made in them, and the two openings united by sutures. The parts then were reduced and the abdominal cavity was closed. The patient lost but little blood during the operation, and the shock was slight. The temperature did not rise above 100.2° F., and pain was not severe. On the second day icterus developed and persisted for two weeks. There was no evidence of hepatic trouble, so that the icterus was probably of the rare hæmatogenous form. There was a great amount of bloody serum in the abdominal cavity that was not sponged out, in order to save time. The same phenomenon had been observed by Leisrink after gastro-enterostomy, and had been attributed to the same cause. The bowels moved on the eighth day. The patient was up on the twenty-third day, and left the hospital at the end of eight weeks. She had gained forty pounds during the three months that had elapsed since the operation, her bowels moved every day without help, and she could eat anything. Although the disease was still present, she felt so well that she was anxious to resume her former occupation of stewardess on an ocean steamer. So far as the speaker was aware, this was the first successful case in which two portions of the colon had been united in this manner.

Tuberculous Tumor compressing the Spinal Cord; Complete Paraplegia; Operation; Recovery.

—Dr. R. ABBE presented a patient having the following history: N. P., aged twenty-one, a Swede, was admitted into St. Luke's Hospital March 6, 1888. He gave no history of either syphilis or tuberculosis and had never had any acute or chronic illness. Since the 1st of January, 1888, he had had slight pain in his back. On examination, nothing abnormal was found except a slight fullness of the soft parts over the ninth and tenth dorsal vertebræ, where there was some pain on pressure, as well as on motion. The patient came under the care of Dr. Kinnicutt at St. Luke's Hospital, who diagnosticated tumor of the spinal canal. He was examined by Dr. Ridlon, who did not believe that Pott's disease was present, because the tenderness was confined to the spinous and right transverse processes rather than to the vertebral bodies or intervertebral discs. The patient was put under treatment with iodide of potassium, and the pain in the back was relieved

by blisters. Four weeks later the swelling alongside of the tenth spinous process had increased in size so as to form an indurated mass, measuring two inches and a half by three inches. Disturbed tactile sensibility was noted in both lower extremities, and a line of hyperæsthesia could be traced extending across



the lower part of the abdomen from one anterior superior spine to the other, below which line the normal sensibility was diminished. The patellar and plantar reflexes were marked. The muscular power in both legs was notably diminished. On April 27th the patient moved his legs with difficulty and could not stand without swaying and almost falling. Ankle-clonus was present. The patient complained of twitching of the legs, and they became cyanotic when allowed to hang over the edge of the bed. There were no bladder or rectal symptoms. On May 4th the patient complained of rapidly increasing weakness, with severe pain in the spine on moving in bed. The entire spine was rigid. Pressure on the ribs caused pain. There was entire loss of sensation in the right leg, with tenderness and hyperæsthesia over the abdomen.

On May 10th the patient was much weaker and had hectic. He complained of constant intercostal and girdle-pains. There was severe muscular twitching. Urine and fæces were retained with difficulty. On May 25th the patient was seen in consultation by Dr. Seguin, Dr. Bull, Dr. Kinnicutt,

Dr. Weir, Dr. Murray, Dr. Shaffer, Dr. Ridlon, Dr. Peters, and the speaker. A needle was introduced deep into the tumor and pus was withdrawn. Operative interference was advised.

May 29th.—The patient was etherized and an incision six inches in length was made on the left side of and half an inch from the spine, commencing opposite the sixth dorsal vertebra and terminating at the twelfth. The tissue was divided down to the lamella, and about two ounces of cheesy pus were evacuated. The lamellæ and spinous processes of the eighth, ninth, and tenth dorsal vertebrae, being carious, were removed with a rongeur forceps, revealing a mass of dense connective tissue and broken-down material which occupied nearly the entire diameter of the canal for two inches and a half and pressed the cord tightly against the anterior wall. This was thoroughly cleared away with Volkmann's spoon. The bodies of the vertebrae were found to be covered with healthy periosteum, although pus had made its way around to the front of the vertebrae and along the tenth rib. The cavity was packed with iodoform gauze, a counter-opening having been made on either side of the spinal column and two rubber drains introduced. After thorough irrigation with bichloride solution (1 to 1,000), an antiseptic dressing was applied, and over this a plaster jacket. The wound healed rapidly, and by June 8th sensation had begun to return in the lower limbs. On the 25th the patient could move his left leg and the toes of the right foot. He had gained in weight and was free from pain. A month later he could move both legs, the flexors responding more quickly than the extensors.

August 5th.—The patient could go about the ward in a rolling chair. The wound had almost entirely healed. In the course of another month he was able to walk on crutches. At the present date he was making steady improvement; his general condition was excellent, he had no fever, was free from pain, could move his limbs, and stand, and walk with the support of a chair.

Fracture of the Coronoid Process and of the Head of the Radius.—The PRESIDENT presented a male patient who, three months before, had been brought to the hospital with an injury of the left elbow, the cause of which was unknown. There were considerable swelling and tenderness. The head of the radius projected externally and there was crepitus on rotation. On supination of the forearm the radius projected still farther laterally. With the elbow at a right angle the forearm could be moved backward and forward about a quarter of an inch; these symptoms seemed to indicate that there must be a fracture of the coronoid process, with or without rupture or avulsion of the orbicular ligament, in consequence of which the head of the radius was freed from its usual connections. The arm was flexed at a right angle and put up in plaster, which was removed at the end of three weeks, when it was found that there was no improvement. The president decided to perform arthrotomy. An incision was made on the outer aspect of the elbow, the joint was opened, and the head and neck of the radius were excised. The following condition was present: The coronoid process was broken off at its base; the head of the radius was split antero-posteriorly, and the inner half was broken into two pieces, one of which was displaced forward and lodged in the anterior ligament. The neck was crushed in such a way that the upper surface of the head formed an oblique angle with the shaft. The patient made a rapid recovery and the plaster splint had just been removed. He had a range of motion of about a right angle. Pronation was complete, but supination was limited. Fracture of the coronoid process was of very rare occurrence, and was commonly associated with a similar fracture of the head of the radius, as in the case reported. There were only about twelve cases on record. In this instance the forearm had probably been driven forcibly against the front of the humerus, and thus the coronoid process broken and the head of the radius smashed.

Radical Cure of Hernia.—The PRESIDENT presented a patient illustrating the result of an operation for the radical cure of hernia. The canal was occupied by a large, firm, cicatricial plug. The president's practice was to split open the external oblique, to isolate the sac, to ligate it and excise the redundant portion, and finally to narrow the canal by sutures over a drainage-tube which was left *in situ* for two weeks, as it seemed to promote the formation of a large cicatricial mass. He usually opened the sac before ligating it, in order to be sure that no intestine or omentum would be included in the ligature.

Dr. ABBE thought that the cicatricial plug in the patient presented was mostly outside of the external ring. It was important to plug the canal itself.

Cerebral Abscess as a Sequel of Compound Fracture of the Skull.—Dr. FRANK W. ROCKWELL read a paper thus entitled (see page 565).

Dr. ABBE said that one of the chief difficulties in these cases was that when the patient had fever and convulsions it was difficult to say whether he had encephalitis or abscess. He cited cases in which the symptoms had seemed to point to encephalitis, but in which, when the dura was punctured, no pus had been found, and the autopsy had shown only encephalitis.

Dr. C. K. BRIDDON said that he had frequently seen cases of compound fracture of the skull in which symptoms of encephalitis existed; paralyzes were rare. He had often sought for

pus, and had been unable to find it, even at the autopsy. He cited a case in which after a contusion of the skull the patient had rigors, fever, and delirium, terminating in coma. After death an abscess was found in the brain, distant two or three inches from the seat of injury. In another instance a small quantity of pus was evacuated by puncture of the dura, but it proved to be simply a case of general purulent meningitis. The speaker thought that if cases of compound fracture were treated antiseptically from the beginning suppuration would be of rare occurrence.

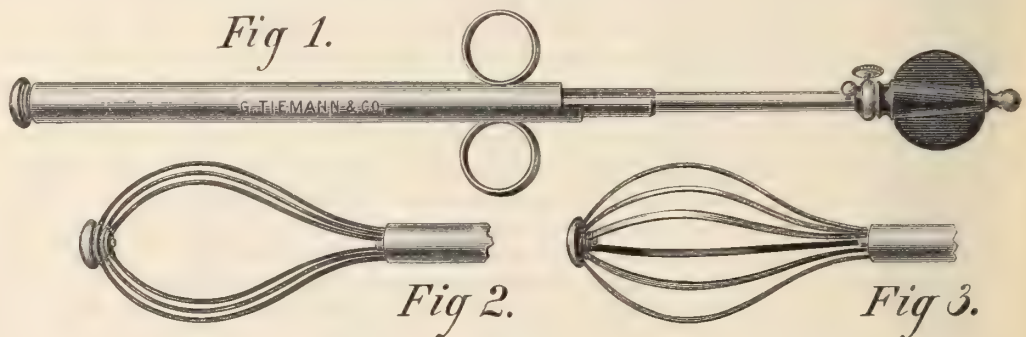
The PRESIDENT said that cerebral abscess after fracture had often been attributed directly to persistent depression, but he thought the sounder opinion now was that it was due either to contusion of the brain or to subsequent suppuration of the scalp-wound. Abscess of the brain might follow scalp-wounds, inflammation of the middle ear, or even ulcers of the nose. The infection appeared to be carried by the veins. Fracture confined to the inner table of the skull was rare, and was nearly always caused by glancing gunshot wounds. It had never been satisfactorily demonstrated that cerebral abscess was due to fracture of the inner table in such cases; it seemed more rational to attribute it to suppuration of the accompanying scalp-wound. He quoted Mr. Hutchinson's statement that there was but one recorded case in which depression of a fragment of the skull had in itself been the cause of symptoms of compression. While we must all admit the safety afforded by the use of antiseptics, he did not believe in trephining unless there was a definite reason for thinking that it would be of service. He would not interfere in these cases without having some definite indication. Of course, when there was a compound fracture the wound should be explored, but the scalp when unbroken offered the best safeguard against cerebral suppuration. He cited a case to illustrate how an abscess might form as the result of prolonged suppuration involving the skull.

A Spiral Steel Catheter broken off in the Bladder.—Dr. ABBE showed the fragments of such an instrument which had been used by one of his patients for six months. One morning, while the man was trying to withdraw it, it broke into three pieces. He was brought to St. Luke's Hospital, where Dr. Parker, the house-surgeon, removed a long fragment which had broken off in the grasp of a deep urethral stricture, and subsequently, after performing cystotomy, he removed the third fragment, which had plowed its way beneath the mucous membrane of the bladder. The spiral steel of the instrument had become rusty at the two weak points.

riages, and sometimes after full-term pregnancies, has often been a most perplexing problem; and in these days of antiseptics we are no longer permitted to trust to nature to expel or dispose of substances that may become most mischievous or poisonous if permitted to linger *in utero*. The placental forceps, blunt hook, wire loop, curette, etc., are all uncertain and unsatisfactory instruments in most hands. And the finger, notwithstanding its intelligence, is but little if any better. In not more than one case in a thousand do we find the comprehensive finger, the shallow pelvis, the thin and relaxed abdominal walls, where it is possible to successfully use the conjoined manipulations so beautifully illustrated in the books and so graphically described by professors.

The great body of general practitioners, after the most patient and conscientious efforts with these instruments, are often compelled to cease their efforts, dissatisfied with the results, if not actually chagrined and mortified at the useless if not injurious hooking, scraping, and gouging. To overcome in some measure the difficulties above indicated, the instrument hereinafter described has been devised by the writer and made for him by Messrs. Tiemann & Co., of New York, in their usual excellent manner.

The writer may be permitted to say here, and once for all, that in the foregoing and what is to follow no dogmatic assertion is intended, but he merely wishes to state his views without circumlocution. The



figures will, it is hoped, give a clear idea of the capiat. (The significance or appropriateness of the name can be readily determined by those concerned or curious about such matters.)

This instrument, designed for intra-uterine use, consists of a tube nine or ten inches long, half an inch in diameter, as seen in Fig. 1, with rings near one end, extending to the head at the left. Through the tube extends a rod, the handle seen on the right of the figure, and having a set of springs at the distal end terminating in a rounded head seen at the left.

Fig. 2 shows the same distal end of the instrument, the rod having been pushed forward or the tube retracted by means of the handle and rings, freeing the springs, which are all lying in the same plane and which expand into an elliptical or oval form about four inches and a half by three inches in its long and transverse axes, unless the cavity in which they act should be of less capacity; in that case the expansion will be limited by the walls of such cavity.

Fig. 3 represents the same after having rotated the rod from left to right, or the tube from right to left, or both simultaneously in these opposite directions, until the tube and the rod have made one third of a complete rotation in relation to each other, when the six springs will be found at equal distances from each other, forming a basket which will have inclosed any substance that may be in the cavity.

The springs may be made of any size, number, strength, or capacity that may be desired, but a capacity up to the size of a turkey-egg or a little larger, with six springs, is deemed sufficient for most cases where such an instrument will be desired. This will inclose an ovum up to the third or fourth month. After that period an ovum rarely comes away entire, and the decidua which often remains and is so prolific in breeding trouble—hæmorrhage, subinvolution, sepsis, etc.—may be readily removed with this instrument.

To use the capiat: It should be thoroughly clean and oiled with carbolized oil, and the various movements made repeatedly to see that

New Inventions, etc.

THE CAPIAT.

By J. S. POYNOR, M. D.,
DAVILLA, TEXAS.

DURING a quarter of a century of general practice the writer has had, perhaps, an average experience with uterine troubles. To cause the expulsion or remove the products of conception in many miscar-

it works perfectly. Having the patient in proper position—it does not matter much which, so that the thighs are drawn up—a finger is passed into the vagina to the os, the cervix being dilated to at least half an inch (no intra-uterine manipulations should ever be attempted with less dilatation than this). The instrument closed, as seen in Fig. 1, is then passed along the finger to the os, in and through the cervix along the posterior wall of the uterus well up to the fundus, which may be determined both by the distance and by the resistance to the broad, rounded head. It is well, after the instrument is in the uterus, to place one hand above the symphysis on the fundus to steady it and assist the judgment as to the proper introduction. The head of the instrument having reached the fundus, the rod is held stationary while the tube is retracted, freeing the springs and allowing them to expand in the antero-posterior plane. If any attachments are apprehended, the tube and rod-handle may be firmly grasped with one hand while with the other the fundus is steadied and the entire instrument gently rotated half round, by which the whole uterine wall will have been swept, except a very small patch directly above the head. If it is desired to sweep that, a slight change in the direction of the long axis of the instrument and a gentle turn will accomplish it. Then distribute the springs—form the basket.

If the uterus is not steadied above the pubes while distributing the springs, it is better to turn the tube and rod simultaneously in opposite directions to avoid the possibility of twisting the cervix or straining the uterine attachments.

After performing the above-described movements, any detached or easily detachable substance that may be in the uterus will be inclosed in the basket of springs. The rod may then be held steady and the tube pushed up, compressing the springs and sinking them into the soft contained mass, or the transverse diameter of the basket of springs reduced to that of the tube if nothing is inclosed. The dull and easily compressible springs would hurt nothing if withdrawn without compression. In either case the basket and contents may be withdrawn at discretion, the finger of one hand being held against the os to make sure that there is no dragging down of the uterus, which should never be drawn down if it is possible to avoid it. Practitioners will find the capiat, when rationally used, sure in action, removing with certainty all detached or easily detachable substances from the uterus or any other cavity not beyond its capacity, and without possibility of harm. There is not an angle, edge, or point about it that can come in contact with the tissues, hence there can be no lacerations.

No considerable force is ever to be used with the capiat, either in working or working with it. It is abundantly strong for every purpose for which it is designed. Used cautiously and gently, it is harmless, painless, and effective.

By taking out the thumb-screws at the handle of the rod, the rod and springs may be pushed through and out of the tube; then, by taking out a screw in the head, the parts are all separated, and may and should be thoroughly cleaned. But it is hardly worth while to say a word about antiseptic precautions at this late day. Instruments must be clean.

The mucous membrane of the uterus (if it may be so called) being firmly attached to the muscular layer, without any intervening sub-mucous or areolar tissue, there is no danger in passing over its surface a dull and easily compressible spring—no danger of lacerating or removing anything that should not come away. Indeed, if desired, a pair of the springs might be sharpened and used instead of the sharp curette. They would do a much better operation than the curette in the hands of any except the most practiced and skillful operators, and much more expeditiously.

At slight expense a joint with a slide may be made in the rod, which will shorten the instrument to little more than the length of the tube, thus making it more compact and convenient to those who do not habitually carry an obstetrical case.

Different sets and sizes of springs may be made to work with the same rod and tube, if desired.

To recapitulate. The capiat will save the great army of general practitioners throughout the country from many weary, anxious hours of waiting and temporizing with drugs, tampons, and repeated gougings with uncertain and often painful and dangerous instruments, to say

nothing of the tortures and perils that helpless patients will escape, which, after all, is the great matter.

A much more elaborate article might be written, but it would be useless, if not impertinent, to an enlightened profession, to whose judgment the capiat is most respectfully submitted.

November 1, 1888.

AN ATTACHMENT FOR AGNEW'S BIDENT.

By JOSEPH A. ANDREWS, M. D.

FROM time to time during the past two years the writer has been solicited by correspondents to furnish them with a description of his modification of the bident* invented by the late Dr. Cornelius R. Agnew for the purpose of facilitating the removal of a lens dislocated into the anterior chamber or vitreous chamber.

The writer simply designed a holder for the bident which is somewhat more convenient than the needle-holder originally employed by Dr. Agnew. The handle of the holder is 12 centimetres long, a trifle stouter than the handle of a cataract knife, and, like the latter, is made of ivory. The needles of the bident are two centimetres, or about $\frac{1}{3}$ of an inch, in length, 3.05 mm. apart, and of the same breadth and shape as the ordinary cataract needle. The projection at which the proximal ends of the needles are united is round (instead of flat, as in the original design), with a small hole to receive the spring catch in the holder, by means of which the bident is firmly grasped in the holder. When the eye has been transfixated with the needles, the latter should be detached from the holder before the anterior chamber is opened, this detachment being readily effected by simply depressing the spring in the holder and then gently withdrawing the latter.

The instrument is made by W. F. Ford, of Hazard, Hazard, & Co., New York.

39 WEST THIRTY-SECOND STREET.



Miscellany.

The Southern Surgical and Gynecological Association will hold its annual meeting in Birmingham, Ala., on the 4th, 5th, and 6th of December. An address will be delivered by the president, Dr. W. D. Haggard, of Nashville, Tenn., and an oration by Dr. W. F. Hyer, of Meridian, Miss. Papers are announced as follows: "Gastrostomy," by Dr. W. B. Rogers, of Memphis, Tenn.; "Superinvolution of the Uterus following Trachelorrhaphy," by Dr. Virgil O. Haddon, of Atlanta, Ga.; "Indications for Operative Interference in Cerebral Troubles," by Dr. T. O. Summers, of Jacksonville, Fla.; "A Case of Tubal Pregnancy presenting Interesting Medico-legal Relations," by Dr. E. P. Sale, of Memphis, Tenn.; "The Extravagances and Impracticable Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is concerned," by Dr. J. M. Taylor, of Corinth, Miss.; "Antiseptics in Surgery and Gynecology," by Dr. F. T. Meriwether, of Asheville, N. C.; "My Antiseptic Bags, or Practical Antiseptic Surgery," by Dr. J. W. Long, of Randleman, N. C.; "Floating Kidney with Vicarious Menstruation," by Dr. De Saussure Ford, of Augusta, Ga.; "New Treatment of Intra-uterine Fibroids," by Dr. E. J. Beall, of Fort Worth, Tex.; "The Medical Treatment of Fibroid Tumors of the Uterus," by Dr. Bedford Brown, of Alexandria, Va.; "Alexander's Operation," by Dr. W. L. Nichol, of Nashville, Tenn.; "The Present Status of Electro-

* For directions as to use of the bident, see Dr. Agnew's article, "Transactions of the American Ophthalmological Society," 1885.

therapeutics in Gynæcology," by Dr. J. R. Buist, of Nashville, Tenn.; "Hysterectomy in Cancer of the Uterus," by Dr. W. H. Wathen, of Louisville, Ky.; "Fractures of the Forearm," by Dr. John Brownrigg, of Columbus, Miss.; "The Treatment of Fractures with Plaster-of-Paris Splints," by Dr. W. F. Westmoreland, Jr., of Atlanta, Ga.; "Interesting Cases of Surgery," by Dr. R. M. Cunningham, of Pratt Mines, Ala.; "The New Departure in Uterine Therapeutics—the Dry Method," by Dr. T. A. Means, of Montgomery, Ala.; "A Study of the Various Methods of Treatment of Laceration of the Perinæum and Rectocele," by Dr. J. H. Blanks, of Meridian, Miss.; "Perineal Lacerations," by Dr. M. C. Baldrige, of Huntsville, Ala.; "Cystoscopic Exploration," by Dr. A. V. L. Brokaw, of St. Louis, Mo.; "Shock of Injury and its Effects," by Dr. John R. Page, of Birmingham, Ala.; "Some Practical Thoughts in Surgery and Gynæcology," by Dr. James Guild, of Tuscaloosa, Ala.; "The Field and Limitation of Laparotomy," by Dr. I. S. Stone, of Lincoln, Va.; "Operative Procedures in Traumatic Epilepsy," by Dr. J. T. Wilson, of Sherman, Tex.; "Surgical Tuberculosis," by Dr. W. Locke Chew, of Birmingham, Ala.; "The Treatment of Certain Forms of Menorrhagia," by Dr. W. D. Bizzell, of Atlanta, Ga.; "Electrolysis in the Treatment of Urethral Strictures," by Dr. S. M. Hogan, of Union Springs, Ala.; "Operative Procedures in Hypertrophy of the Prostate," by Dr. R. D. Webb, of Birmingham, Ala.; "Electrolysis in Morbid Alterations produced in the Prostate by Gonorrhœa of the Urethra," by Dr. J. D. S. Davis, of Birmingham, Ala.; and "Dermoid Cysts of the Coccygeal Region," by Dr. E. J. Beall, of Fort Worth, Tex. There will also be a discussion on "Abdominal Surgery."

Fish Poisoning.—According to the "Union médicale," a prize of 5,000 roubles is to be awarded in Russia for the best essay on the nature of the poison which develops in raw salted fish. The points to be considered are: The precise physical and chemical nature of the poison, as shown by experiments; its action on the heart, the circulation, the digestive organs, and the nervous system, as shown by experiments on animals; the rapidity with which it is absorbed from the alimentary canal; the signs by which contaminated fish may be distinguished from those that are sound; the means of preventing the development of the poison; and the antidotal and other medical treatment of persons suffering from the effects of the poison. Competing essays must reach the *Ministère des domaines* before January 1, 1893.

An Association of Acting Assistant Surgeons of the United States Army, past and present, has been formed "for the purpose of securing, so far as possible, a correct history of those who have served in this capacity, and also for mutual protection and benefit." Communications may be addressed to Dr. W. T. Parker, Newport, R. I.

The Health of Connecticut.—According to the "Monthly Bulletin of the Connecticut State Board of Health," for the month of September, in 162 towns there were 959 deaths, including 9 from scarlet fever, 13 from cerebro-spinal fever, 58 from diphtheria and croup, 4 from whooping-cough, 62 from typhoid fever, 15 from malarial fever, 9 from typho-malarial fever, 46 from diarrhœa, 128 from consumption, 56 from pneumonia, and 25 from bronchitis.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for the month of October, the whole number of deaths was 460, including 1 from cerebro-spinal meningitis, 11 from cholera infantum, 1 from cholera morbus, 10 from croup and diphtheria, 3 from dysentery, 7 from diarrhœa, 13 from typhoid fever, 3 from malarial fever, 1 from typho-malarial fever, 3 from pyæmia, 2 from whooping-cough, 1 from scarlet fever, 1 from septicæmia, and 2 from small-pox.

THERAPEUTICAL NOTES.

The Glycerin Treatment of Constipation, enemata of from forty to fifty grains being used, has been tried by L. Novotny (Pester med.-chir. Presse) in two hundred cases representing the most varied forms of disease. In almost all of them defecation took place after one or two minutes, but in four or five cases from two to three hours elapsed before the effect occurred. No unpleasant action was observed. In about a third of the cases there was first a solid movement, followed in

an hour by a second that was soft or liquid. Reisinger ("Prager med. Wochenschrift") also reports satisfactory results from the treatment. Both articles are summarized in the "Centralblatt für klinische Medicin."

Rectal Saline Injections in Post-partum Hæmorrhage.—Mr. R. F. Gill ("Lancet") recommends rectal injections of saline solutions as a substitute for transfusion where the latter is impracticable. He would inject three or four ounces at a time, and repeat the injection every ten or fifteen minutes, using a tepid solution. He speaks of a case in which he thinks life would have been lost but for recourse to this measure.

Antipyrine in Hæmorrhoidal Ulcers.—J. Schreiber ("Therap. Monatsh.," "Memorabil.") reports a case of obstinate hæmorrhoidal ulceration in which the itching was promptly stopped and healing soon produced by insufflations of finely powdered antipyrine.

ANSWERS TO CORRESPONDENTS.

No. 240.—Nine volumes have been published. The work gives the names of authors and the titles of books and journal articles. You can obtain it of the Public Printer, Washington, D. C. We do not know the price.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE ELECTROLYTIC DECOMPOSITION OF ORGANIC TISSUES.*

By GEORGE H. ROHÉ, M. D.,

PROFESSOR OF DERMATOLOGY AND HYGIENE IN THE COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

MANY compounds existing in the fluid state, whether fused or in solution, may be decomposed by passing through the liquid a current of electricity of sufficient strength to overcome the chemical affinity between the component molecules. This process of electrical decomposition was discovered by Nicholson and Carlisle in 1800, and was afterward very thoroughly studied by Faraday, to whose accurate researches we owe most of the definite knowledge upon the subject.

The nomenclature used in discussions of this subject is sufficiently technical and unfamiliar to warrant some brief definitions before proceeding.

A compound which is decomposable by an electric current is called an *electrolyte*, and the process of decomposition itself is called electrolysis.

The battery terminals immersed in the liquid thus decomposed are called *electrodes*; the one connected to the positive pole is the *anode*, that connected to the negative pole is the *cathode*.

The bodies (elementary or compound) resulting from the decomposition of an electrolyte are called *ions*; those collecting at the anode are *anions*, those at the cathode, *cations*.

Electro-motive force, or, as it is often termed, difference of potential, is that power by virtue of which electric force overcomes resistance. Its unit of measurement is the volt, which is nearly equivalent to the potential difference of a standard cell of Daniell's battery.

Resistance is the obstruction offered by a circuit to the passage of electric force. Its unit of measurement is the ohm, which is nearly equivalent to a copper wire one twentieth of an inch in diameter and two hundred and fifty feet long. The reciprocal of resistance is conductivity; the best conductors offer least resistance to the passage of a current, and *vice versa*.

Current strength practically represents the working power of a definite electric force in a circuit. Its unit is the ampère. Current is absolutely measured by the rate of chemical decomposition going on in a voltameter introduced into a circuit, or by the decomposition in the battery itself. It is said to be proportional to the electro-motive force of the battery divided by the resistance of the circuit. In electro-therapeutics the ampère is rarely or never used to designate current-strength, the unit generally employed being the thousandth part of an ampère, called a milliampère. It may not be improper to adopt the milliampère as the electro-therapeutic unit, as suggested, I believe, by Sir Spencer Wells.

The coulomb is the unit of quantity. It is equal to one unit of current (ampère) passing in one unit of time (one second). In other words, a current of one ampère in a circuit will produce one coulomb to the second. This unit has not been much employed in recording electro-therapeutic observations, but it, or a subdivision of it corresponding to the milliampère (millicoulomb), would enable observations in electrolysis to be compared with much greater accuracy and definiteness than heretofore. For example, to say that a current of ten milliampères was used in a given case gives no definite notion of the amount of electric energy brought into requisition unless the exact time during which such a current was acting is also stated. The statement that six coulombs were employed would at once indicate the exact amount of electrical decomposition produced. It must be borne in mind that the ampère and coulomb, representing definite results of electrical activity, have much more meaning than the volt and ohm, which are mere arbitrary standards.

The coulomb is that quantity of electricity which will liberate .0104 milligramme of hydrogen when passed through a decomposition cell or voltameter. Faraday demonstrated that the quantity of electricity necessary for the decomposition of electrolytes has a definite relation to the chemical equivalents of the elements entering into the composition of the electrolyte. Hence the quantity of electricity (in coulombs) needed to decompose any compound susceptible of electrolysis can easily be ascertained by multiplying its chemical equivalent by the electro-chemical equivalent for hydrogen—i. e., .0104. For example, the chemical equivalent of zinc is 32.5, hydrogen being 1. One coulomb of electricity will liberate .0104 milligramme of the latter from any of its compounds. By multiplying 32.5, the chemical equivalent of zinc, by .0104, the electro-chemical equivalent of hydrogen, we find $32.5 \times .0104 = .3380$, which is the electro-chemical equivalent of zinc, or the number of milligrammes of this element liberated by one coulomb of electricity from any of its compounds in solution.

If, on the other hand, the quantity of zinc which has been liberated or deposited is known, the quantity of electricity in coulombs required for its liberation can easily be calculated.

A number of laws governing electrolysis have been established by the labors of Faraday and other investigators. The following are among the more important of these laws: An elementary body can not be an electrolyte. Electrolysis does not take place in solids. Bodies must be in a state of fusion or solution before electrolytic decomposition can take place in them. Electrolytic decomposition occurs only at the surface of the electrodes immersed in the electrolyte.*

Electro-positive elements appear at the negative electrode; electro-negative elements at the positive electrode.

* It is not altogether certain that this law holds good for all electrolytic decompositions. There are reasons for believing that in organic and other unstable compounds the electrolytic field is not so definitely limited.

* Read before the American Dermatological Association at its twelfth annual meeting.

The following table gives the electric polarity of a number of elements:

<i>Electro-positive Elements.</i>	<i>Electro-negative Elements.</i>
Hydrogen.	Oxygen.
Potassium.	Chlorine.
Sodium.	Iodine.
Gold.	Bromine.
Silver.	Nitrogen.
Copper.	Sulphur.
Mercury.	Fluorine.
Tin.	Phosphorus.
Iron.	Carbon.
Nickel.	
Zinc.	
Lead.	
Manganese.	
Magnesium.	
Calcium.	

It must not be assumed, however, that the positions assigned to the various elements in these columns are definite. Electro-negative elements may acquire positive polarity, and *vice versa*. The polarity of the elements depends upon their relations to other elements in a compound rather than upon any intrinsic property.

Ions do not always appear at the electrodes in the form of elements, but sometimes as compounds. Thus, in the decomposition of sodium sulphate, sulphuric acid appears at the anode and soda (sodium oxide) at the cathode. It is generally stated that these compounds are the results of immediate recombinations between elements set free at the electrodes, but there are serious difficulties in the way of accepting this theory, unless we assume these newly formed compounds to be particularly unstable and subject to immediate redecomposition under the influence of the current.

Whenever an electrolyte is decomposed by a current of electricity, the resolved ions have a tendency to reunite, thus setting up an opposing electro-motive force to the decomposing current. This tendency to reunite is commonly termed "chemical affinity." The electro-motive force of the decomposing current must therefore be greater than that due to the chemical affinity of the resolved ions. For example, when water is decomposed by a current of electricity into its constituent ions—oxygen and hydrogen—the opposing electro-motive force due to the chemical affinity of these two gases is about 1.5 volts; therefore, to decompose water, a battery having a higher electro-motive force than 1.5 volts is necessary. Inattention to this fact may account for the contradictory results obtained in some cases where electrolysis is employed for therapeutic purposes.

The quantity of the substance which is decomposed is proportional to the quantity of electricity passing through the electrolyte, and is independent of the size of the electrodes and of the time during which the current is passing.

The quantity of an ion liberated at an electrode in a second is equal to the strength of the current multiplied by the electro-chemical equivalent of the ion. Reciprocally, the quantity of electricity in coulombs which has passed through the electrolyte is equal to the weight of the ion which has been liberated divided by the electro-chemical equivalent of the ion.

The electro-chemical equivalent of an ion is the quantity of the ion liberated by the passage of one coulomb of electricity.

The amount of electro-chemical action is equal at all points of the circuit. This law seems to contradict that stated above—that decomposition takes place only at the surface of the electrodes. This entire subject is, however, still in such an indefinite state that both propositions must be accepted with some reservation. Unfortunately, physicists are not yet in entire agreement as to the normal condition of the molecular aggregations of matter in liquids. Professor Clerk Maxwell seems inclined to accept the theory of Clausius, which, indeed, assists us materially in understanding the action of electrolysis in organic tissues. This theory is as follows:

"Every molecule of a fluid moves about in an exceedingly irregular manner, being driven first one way and then another by the impacts of other molecules, which are also in a state of agitation.

"This molecular agitation goes on at all times independently of the action of electro-motive force. The diffusion of one fluid through another is brought about by this molecular agitation, which increases in velocity as the temperature rises. The agitation being exceedingly irregular, the encounters of the molecules take place with varying degrees of violence, and it is probable that even at low temperatures some of the encounters are so violent that one or both of the compound molecules are split up into their constituents. Each of these constituent molecules then knocks about among the rest till it meets with another molecule of the opposite kind, and unites with it to form a new molecule of the compound. In every compound, therefore, a certain proportion of the molecules at any instant are broken up into their constituent atoms.

"Now, Clausius supposes that it is on the constituent molecules in their intervals of freedom that the electro-motive force acts, deflecting them slightly from the paths they would otherwise have followed, and causing the positive constituents to travel, on the whole, more in the positive than in the negative direction, and the negative constituents more in the negative direction than in the positive. The electro-motive force, therefore, does not produce the disruptions and reunions of the molecules, but, finding these disruptions and reunions already going on, it influences the motion of the constituents during their intervals of freedom. The amount of this influence is proportional to the electro-motive force when the temperature is given. The higher the temperature, however, the greater the molecular agitation, and the more numerous are the free constituents. Hence the conductivity of electrolytes increases as the temperature rises."*

There is no actual transfer of ions from one electrode to the other. The passage of the current through an electrolyte is supposed to take place by polarization of the molecules, by which the electro-positive element is turned toward the cathode and the electro-negative element toward the anode.

The terminal element at each end of the series is then torn loose from its combination with its fellow and given off at the electrode, combined with the latter or with other free molecules in the vicinity, or diffused in the liquid.

* J. Clerk Maxwell, "An Elementary Treatise on Electricity," Oxford, 1881, p. 104.

This theory was first propounded by Grotthüs, and has been generally accepted by electricians. The theory of Clausius, however, seems to solve the problem much more satisfactorily. This point will be again adverted to presently.

Pure water is said not to be an electrolyte, inasmuch as it is a non-conductor, and all electrolytes are conductors. Yet water, slightly acidulated with sulphuric acid, is used as the electrolyte in voltmeters, and most of the laws of electrolytic decomposition have been deduced from observations upon this medium. There is no question that water, holding either acid or a salt in solution, is decomposable by an electric current of sufficient potential difference. Whether the electrolytic action in this case is the result simply of the higher conductivity of the water, or whether the acid or salt perform some other part in the process, is not known. It seems probable that the additions to the water promote electrolysis by increasing the conductivity. There is reason to believe, however, that even absolutely pure water is not entirely resistant to the electrolytic current.

According to one of the laws of electrolysis above quoted, there is no actual transference of ions through the electrolyte. But there must be some molecular change going on between the ions, otherwise no conduction of current could occur. Visible decomposition, however, occurs only at the electrodes. It is not yet satisfactorily established whether the molecules of compounds are all in a state of stable combination, or whether Clausius's theory of free molecules in a compound may be invoked in explanation. If the latter is the case, we may represent to ourselves the free molecules being brought into line by the current and advancing toward the electrodes in opposite directions, the electro-positive elements, or ions, going with the current, or "down hill," as Dr. Lodge has cleverly suggested, while the electro-negative elements travel against the current, or "up hill."

It seems to have been clearly established by numerous experiments that galvanic conduction through liquids is always electrolytic; in other words, that there can be no conduction of an electric current through a liquid without that molecular rearrangement in the field through which the current passes, and that molecular disintegration at the surfaces of the electrodes which we know as electrolysis.

If this is true, and there is no reason to doubt that it is, many of the current notions of the physiological action of the galvanic current upon organic tissues require modification. We shall be obliged to assume that every time we use the constant galvanic current for therapeutic purposes—whether to relieve pain in a nerve, to stimulate nutrition in muscle or other tissue, or to perform what we are now accustomed to call an electrolytic operation—we are performing electrolysis in all cases, for the human body may be regarded as a large and exceedingly composite electrolyte. Upon this hypothesis distinct and very marked advances may be expected in our applications of the galvanic current in the treatment of disease. The various processes supposed to go on in the body under the influence of an electric current, and termed by different authors electrical absorption, electrical osmosis, and electro-catalysis, will prop-

erly be ranged under the single conception of electrolysis. It must be evident at first thought how much such a conception will simplify and render explicit a subject upon which there is at present much loose thinking and vague writing.

With this preliminary discussion of the physical facts and principles of electrolysis, we are prepared to enter upon the study of this process as applicable for the decomposition, destruction, or modification of normal and pathological organic tissues.

Organic tissue is an electrolytic conductor—i. e., a current can pass through it only by electrolytic decomposition of its compounds, in accordance with the law that "the electricity does not flow *through* but *with* the atoms of matter which travel along and convey their charge."* This does not mean necessarily that the atoms travel throughout the entire distance from one electrode to the other, but that they give off their charge to the next in series, and so on to be passed along to the end of the electrolytic circuit, where the electricity is either given up to the electrode or converted into another form of energy by a combination of the carrying atom with others.

Hitherto the human body has been measured electrically merely as a conductor or as a resistance, but the more rational proceeding would seem to me to consider it as an electrolyte.

In electrolysis of organic tissues there are probably several processes to take into account. In the first place, it is extremely likely that the water of the tissues with certain salts, acids, and other compounds in solution yields to the disruptive power of the current, and hydrogen with other electro-positive ions are set free or recombined at the negative electrode, while oxygen and negative ions are separated at the anode.

But while this liberation of atoms and molecules takes place at the terminals of the battery, what is going on in the track of the contrary processions of ions between the electrodes? In other words, is there any interpolar action of the current, and in what does it consist? In my opinion, there is of necessity a loosening or shaking up of the interpolar compounds which results variously according to the vitality of the tissues. If the current is of moderate strength and the tissues have the normal degree of vital resistance, the molecular disturbance will probably result merely in an improvement of nutrition, in accordance with the general biological law that moderate stimulation produces increase in nutrition. If the current is of excessive strength, there will probably be some breaking up of compounds which may affect nutrition unfavorably. I think every one who has used electricity much and observantly must be able to recall cases where this explanation would be at least a plausible one.

Actually, we know really nothing of the interpolar effects of electric currents in organic tissues. In inorganic compounds, with their simple and stable organization, the electric current may not produce any interpolar change, although the theory of Clausius rather favors the view that interpolar decomposition occurs; but in organic compounds,

* Lodge, "Nature," 1887.

with their more complex and unstable composition, we can readily understand that the continual rearrangement of molecules under the influence of electrolytic conduction may so disturb the harmonious relations of the molecules as to render decomposition more easy. If the tissues are normal, recovery and repair of slight defects may promptly follow, but in the case of pathological products—inflammatory infiltrations, new growths, serous effusions, etc.—it stands to reason that a molecular disturbance of some extent or continued for some time may produce such a modification of nutrition in the tissue as to promote its regressive metamorphosis. That this actually takes place I firmly believe, although I am unable to give an exact demonstration of the process. I am also strongly of opinion that in many pathological products or tissues a retrogressive change begun under the influence of an electrolytic current is kept up after the immediate action of the current has been discontinued. I need only refer here to the numerous examples of cure of new growths, inflammatory deposits, and serous collections on record. A brief reference to one case under my own observation may not be out of place here. In 1886 I gave a partial report of a case of goitre treated by electrolysis. The tumor grew smaller under the applications, but the diminution in size did not cease with the discontinuance of the treatment. The regressive tendency set up continued until at present the tumor has almost, if not quite, disappeared. Similar results are alleged by gynæcologists who have properly used the electrolytic method in fibroid tumors of the uterus according to the method of Apostoli. My friend Professor Hardaway has reported analogous results with cases of keloid and hypertrophic scars, and my own experience with such growths as fibromata, vascular nævi, epithelial and papillary neoplasms is strongly corroborative. At first I was disposed to attribute this continued effect of the electrolytic applications to a condensation of connective tissue robbed of part of its nutrition, but further study has led me to ascribe a share of the result to the continuous modification of vital activity impressed upon the tissue by the electrolytic current. The progressive disappearance of serous collections (hydroceles, arthritic effusions, cysts of various kinds) and of inflammatory infiltrations after interruption of the electrolytic séances must, I think, be attributed to a similar action. On no other hypothesis known to me can these results be so rationally explained.

In the electrolytic action most frequently made use of in dermatological practice—namely, extirpation of superfluous hairs—we have normal tissue to act upon—one, in addition, which is very resistant to external impressions, and readily regenerated. Here we need strong currents, because the tissues have normal chemical and vital stability, and we must produce complete destruction of the papilla if the hair shall not be renewed. It is not improbable in this case that the electrolytic action may continue after the cessation of the operation, although I am inclined to attribute little effect to this.

For the destruction of new formations, the more succulent and of lower vital resistance require less current strength than those composed of the more resisting tissues,

such as fibroids and vascular growths. Fibro-pigmentary growths (pigmented nævi) are usually very resistant to electrolytic destruction, and require strong currents and thorough application to the whole affected surface if good results are expected.

In stricture of the urethra we have pathological conditions which should react favorably to the electrolytic current. Excluding strictures due to traumatism or to ulceration of the mucous membrane, the pathological condition consists in an inflammatory new formation in the submucous tissue. The removal of this infiltration by absorption is rationally indicated and striven after in most methods of treatment of stricture. The method of gradual dilatation by means of sounds can only be justified and explained on the score of causing absorption of the submucous infiltration. The very uncertainty of this method shows that it fails to bring about this absorption in so large a proportion of cases. The method of cure by internal urethrotomy seeks to produce such a change in nutrition that the inflammatory neoplasm will be absorbed and the normal caliber restored. Those who hope to widen a strictured urethra by a cutting operation with a view of inducing nature to insert a strip of cicatricial tissue between the borders of the incision, have such a childlike notion of pathological anatomy that no time need be wasted in paying attention to their opinions. All surgeons who study pathology practically, and not transcendently, will agree that the only possible way to cure a stricture is to cause absorption of the submucous inflammatory deposit. No method promises theoretically to accomplish this so safely, promptly, and thoroughly as electrolysis.

Upon the principles stated in the foregoing pages, this method seems the most rationally indicated one. The electrolytic current promotes absorption by causing a chemical resolution of the inflammatory infiltration. And this chemical resolution of the pathological tissue I believe possible without unfavorable influence upon the mucous membrane covering it. Of course, the strength of the current must be properly graded to secure this most desirable result. The statement sometimes made that electrolysis in stricture can result only in the formation of a scar, and consequent contractility of this tissue, is based upon a misapprehension of what takes place.

When Fessenden N. Otis, nearly twenty years ago, brought to the attention of the profession the results of his inquiries into the caliber of the urethra and of improved methods of treating stricture, he was subjected to much ridicule. To-day the views of Otis are accepted by genito-urinary surgeons the world over. The urethrometer eliminated the personal equation and rendered the detection and measurement of a stricture a matter of almost mathematical exactness. Until lately the advocates of electrolysis, whether applied for the relief of stricture or fibroid tumors of the uterus, or other pathological conditions, have likewise been derided, ridiculed, or flatly accused of lying. These weapons, first used with effect by writers and teachers of prominence, have now been picked up by a number of youthful imitators, who, by reporting one or two unsuccessful cases and incidentally exhibiting their crass igno-

rance of the agent they are handling, endeavor to throw discredit upon a procedure which they show that they do not understand.

At a recent discussion of the merits of electrolysis in the treatment of uterine fibroids an English surgeon, who has attained enviable distinction as an ovariologist, declared his unwillingness to try the method because he was "a surgeon," and evidently thought it beneath his dignity to meddle with batteries, needles, and milliampèremeters. His impertinence received a sudden check, however, when the two greatest living abdominal surgeons in the world, Sir Spencer Wells and Thomas Keith, asserted their belief in the efficacy of electrolysis and their intention of giving it preference over the knife in all suitable cases in their practice. The bumpiness of this Englishman is exactly paralleled by that of an American surgeon of my acquaintance who rejects electrolysis even in cases where its effects are unquestioned, on the same grounds.

The study of the electrolytic decomposition of organic tissues has hardly been begun. No clear conception of the process can be obtained until the principles of electrolysis in inorganic fluids are first thoroughly studied. Careful experimental and clinical research is demanded. In face of honest, thorough work, based upon exact knowledge, criticism of the nature of that which has been aimed at electrolysis during the past two or three years will bear its own condemnation.

The present development of the practical applications of electrolysis in medicine and surgery is so largely due to the intelligent and persistent labors of American dermatologists that I considered this association the body best qualified to judge of the worth of the remarks I have submitted. I trust that I have not deviated too far from the subjects that may properly be brought to your attention.

FEMORAL OSTEOTOMY

FOR THE CORRECTION OF DEFORMITY RESULTING FROM
HIP-JOINT DISEASE.*

By AP MORGAN VANCE, M. D.,
LOUISVILLE, KY.

In the part of the country from which I come we have to deal with more of the different deformities resulting from neglected cases of hip and knee joint diseases than are met with in the larger cities, where greater attention has been given to the treatment of this class of troubles in the earlier stages.

It has been my fortune to treat a number of these unfortunates, and it is to relate my experience in a clinical way that I am here to-day. There are one or two points I wish to emphasize. While in New York, a little over a year ago, I spoke to a distinguished surgical friend concerning subcutaneous osteotomy, and was astonished at his saying he had never mustered sufficient courage to do this operation; that he always made a large open wound, so that

he could see what he was doing. This was a new idea to me, as I could not see any reason for the additional work. I have broken a number of bones subcutaneously, and have never had a feeling of any doubt of exactly what was being done, and have never had a single mishap, every case in its progress being practically a simple fracture.

I freely confess that I will break a man's femur subcutaneously with as little misgiving as to the outcome as I would divide his tendo Achillis.

The procedure will be described during the relation of some eight cases of femoral osteotomy, all the patients having practically reached adult life, the justifiability of the operation having been proved by the results.

Of the eight cases to be reported, five were operated upon for deformity the result of hip disease, and the remaining three for deformity following disease at the knee.

The latter cases have proved to me how much better it is to correct, by a bone section, deformity existing at the knee along with slight motion and the patella fixed, than it is to interfere with the formerly diseased joint in an effort to better the condition.

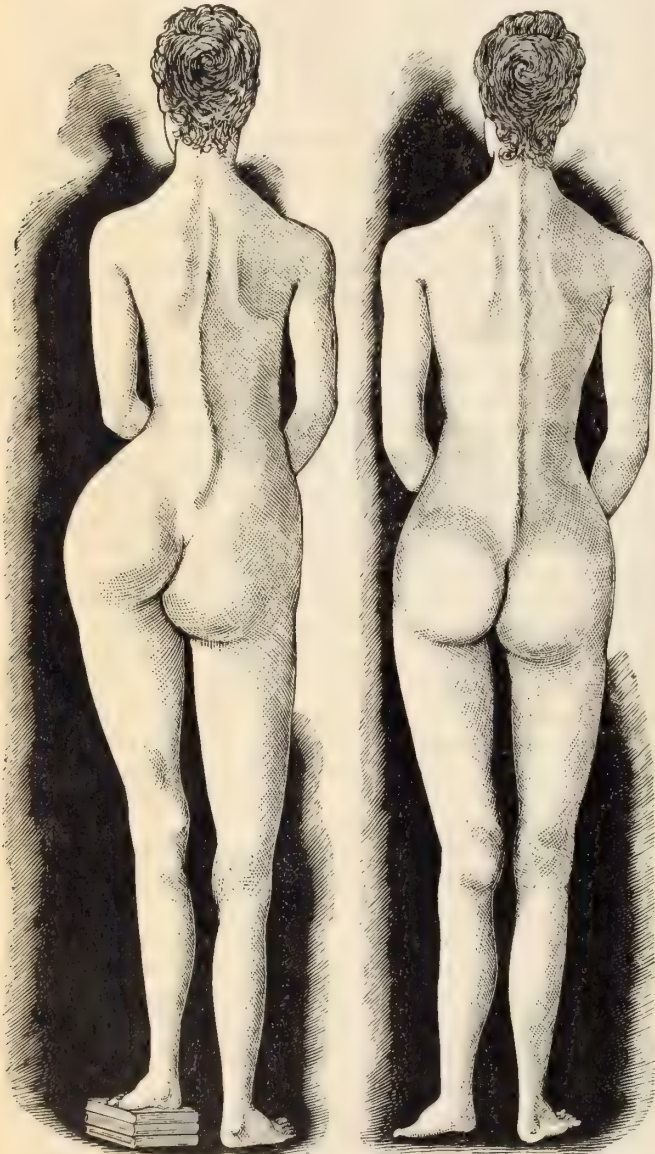
Cases Nos. II and VI have been reported before in the "New York Medical Journal," but, to complete a series, I will refer to them again, as illustrating the advantage of subcutaneous osteotomy.

CASE I. Subtrochanteric Osteotomy (?) in a Young Woman aged Sixteen.—Carrie H. came under my observation first in the spring of 1883, giving this history: Two years before she had been attacked with acute pain and evidences of inflammation about the left hip. She was under the care of skillful surgeons in the town where she lived, in a northwestern territory, who repeatedly aspirated a large abscess which formed, the sac being located on the outer side of the thigh. The abscess finally healed, and, under tonic and constructive treatment, the child gradually recovered, being confined in bed for nearly a year, with weight and pulley attached to the limb, and sand-bags also used to keep the limb in the best position and the joint at rest. Notwithstanding their extreme care, the hip became stiff, as is often the case in extreme adduction; so, when she began walking, there was a practical shortening of four inches and a half or five inches, and, of course, a very marked lateral curvature of spine and obliquity of pelvis.

For the relief of this deformity the parents brought their daughter East, and, after a thorough examination, I advised non-interference, but told them, as they were going further east to New York and Boston, to see surgeons at each place. They did see Dr. Sayre and some Boston surgeon, who agreed with me that there was bony ankylosis at the hip, and the result was too good to be interfered with. But, after three years had passed and the girl had reached womanhood, the deformities grieved the parents very much, and, after communicating with me, who had hinted at bone-breaking as the only chance of correction, they came East again, and on April 16, 1886, the bone section (?) below the trochanter was done as follows: A firm, well-padded block of marble was pressed against the inner side of the thigh as high up as the perinæum would allow. A very sharp, narrow chisel was pushed through the soft parts, the blade in the axis of the limb, the skin at the same time being drawn forward. When the bone was reached, the chisel, being turned, was driven through until the hard substance on the opposite side was reached; this was partially divided; the chisel was then slightly withdrawn and directed posteriorly

* Read before the American Orthopædic Association at its second annual meeting.

and then anteriorly. Without withdrawing the instrument, an effort was made to complete the fracture by using the block for a fulcrum and the femur as a lever, an assistant fixing the pelvis firmly to the table, the patient being on the right side. This failed, even after great force had been applied, for the reason that the adduction was so great the fulcrum could not be placed opposite the weakened point, but below. Further work with the chisel was then done. The instrument became very firmly fixed, a loud snap being produced when it was moved. All present believed it had been broken, but, on withdrawing it, to our relief all of it appeared. The effort to fracture was repeated, and the bone gave toward further adduction; then very easily, when force was applied, toward abduction. The deformity was completely overcome, and the limb was incased in plaster of Paris. Not a bad symptom arose during the after-treatment.



CASE I.

She was able to be up in a rolling-chair by the fourteenth day and walked on crutches by the eighteenth, when a lighter tar board splint, reaching only to the knee, was substituted for the heavy plaster of Paris. At the end of the sixth week she was allowed to walk without crutches, the limb being restored to a position which let the foot reach the floor; at the same time the pelvis was horizontal. After she had walked very well for

a week, using a cane when on the street, the mother noticed a tendency toward the old position when she was tired. Upon examination, to our utter astonishment, we found considerable motion at the hip joint on this side, which allowed the limb, from prolonged habit, to drop into adduction. The question arises, Were we deceived in thinking the bone was broken, or was the marked deformity corrected entirely by the renewal of motion of what was undoubtedly a fibrous ankylosis, or did I break both the bone and the ankylosis? I lean to the latter opinion, not believing that the deformity could be so easily overcome without a fracture. The fact that the chisel was withdrawn destroyed my guide to what took place at the site of its introduction. As the result is, the patient is much better off, being relieved of the short limb and lateral curvature, with a movable instead of a stiff hip.

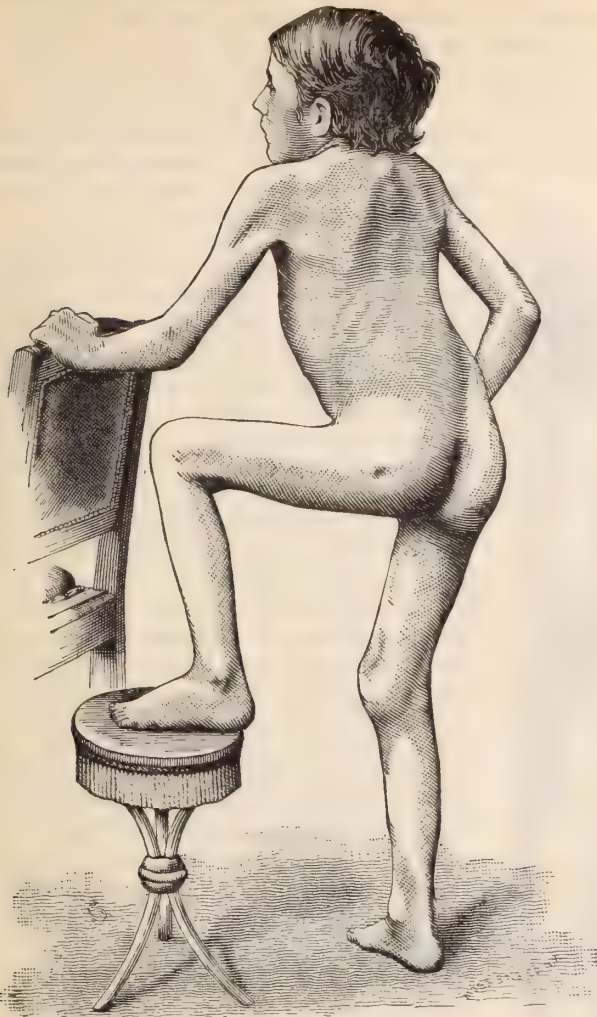
CASE II.—June 11, 1884, H. C., aged nine years, the subject of spinal caries and true hip disease, both long since spontaneously cured, the hip being ankylosed by bone at an angle of less than 90° with the pelvis, the deformity resulting being greater because of the spinal disease in high dorsal region, which took up most of the power of compensation in the lumbar spine.

This boy could stand with difficulty by holding on to his left knee and right hip, but could not walk, his mode of locomotion being on all-fours. The patient was an inmate of the Methodist Orphans' Home, and ready consent to the operation was obtained; and, on the date mentioned, it was performed in the presence of the visiting physicians of the institution and several other professional friends. The patient was anesthetized by Dr. Senteny, and the operation was performed just as in Case I, except that tenotomy of the muscles going to the anterior superior spinous process of the ilium was done in addition, when, without much difficulty, the limb was brought down and fixed in plaster of Paris, 90° of deformity being overcome. The wounds were dressed with compresses of absorbent cotton and the case was treated as one of simple fracture, going on to conclusion without a bad symptom, the boy being able to walk at the end of five weeks. He walks any distance without difficulty, using an elevated shoe to compensate for about an inch and a half shortening of the affected limb.

April 3, 1888.—This boy is seen and examined. He has discarded the high shoe and can walk remarkably well. He has developed in a general way very much, having attended school regularly since the operation, four years ago, and takes part in the different sports of the other boys without any difficulty with his limb.

CASE III.—April 6, 1888, Nick M., aged fourteen years and a half, from near Versailles, Ky. A case of old hip disease which had been cured for six or seven years—in malposition. The left thigh was flexed to about 90° with the pelvis and adducted very much, making this limb practically four inches and a half short, including an inch and a half real shortening from a pathological dislocation. There was very slight motion between the femur and the pelvis. The boy walked by aid of a cane with marked limp, and became very tired when he undertook to go any distance. There had been an abscess, and a deep cicatrix was present below the trochanter.

Osteotomy was performed just as in the preceding cases, and tenotomies were done of all the muscles resisting abduction and extension. The limb was placed in a plaster-of-Paris splint in a position of abduction, so that the inch and a half real shortening would be compensated for by the obliquity of the pelvis resulting when the limb would become vertical in walking. There was no mishap during the after-treatment, and the patient returned to his home at the end of four weeks with a protective splint of leather, which was worn for a week longer and then discarded.



CASE II.

September 7, 1888.—Boy examined again. He walks with remarkable ease and comparatively little limp. When standing, he rests his weight on this limb. Has three quarters of an inch added to his shoe. The motion at the joint has allowed the abduction to be almost overcome, and the pelvis is nearly horizontal. The whole limb has been greatly developed in the five months since the operation, and the patient is in much better general condition. This is the first case of deformity of the hip with motion remaining that I have corrected by osteotomy. As I stated in the opening of this paper, I should prefer this to interfering with the formerly diseased joint.

CASE IV.—Jennie H., aged fifteen, came under observation on July 1, 1885, in the female surgical ward of Louisville City Hospital, where she had been operated upon for a supposed fistula in ano. Soon after this I was asked by Dr. Douglass Morton to treat the case for a deformity the result of an old hip disease. The left limb was found greatly deformed, the girl being unable to get the foot to the ground. The femur was flexed to an angle of 90° with the pelvis and completely adducted. There were a number of old scars about the trochanteric region, and the examination under chloroform proved the joint to be ankylosed by bone. There was a sinus along the left side of the rectum, and the ordinary operation by incision had been done without any good resulting. On careful examination, it was discovered that the source of the discharge was an old fistulous tract through the buttock toward the joint site. I considered there must be dead bone at the bottom of this, though none

was discovered. By Nélaton's test the thigh was estimated to be an inch and a half short. I determined to correct the angle of deformity despite the existence of the discharging sinus, as the patient was in excellent general condition, and I felt sure I could break the femur below the trochanter without disturbing the old joint. On July 20, 1885, in the presence of several of the attending staff, I did the operation just as described in Case I, except the fulcrum, instead of being placed opposite the point of entrance of the chisel, on account of the extreme adduction, had to be placed posteriorly in the region of the gluteal fold, and consequently the difficulty of applying force was greater and the fracture harder to complete. This was done, however, without very great trouble, and the limb brought into the best position for future use, after tenotomy of all the muscles in the adductor region which showed any resistance; also the muscles going to the anterior superior spinous process of the ilium which became tense when extension was made.

The limb was then fixed in plaster of Paris from the toes to the umbilicus. There was no bad symptom, and the patient returned to her home on the fourteenth day, after the application of a lighter splint, which was removed two weeks later, and moderate use of the limb commenced July 30, 1888. The patient has rounded off into complete womanhood; gives a history of having had no trouble with the limb; can walk any distance without difficulty. The sinus still discharges watery fluid in small quantities. She wears an elevated shoe of an inch and a half; little or no limp. I advised her to have the

sinus laid open and scraped before getting married, which is contemplated.

CASE V.—June 7, 1886, Miss T. H., tailoress, aged thirty-two. This woman had been the subject of true hip disease when eight years of age. At the same time there was disease of the right wrist and the shoulder of the same side, small pieces of bone being exfoliated. The right hip was the one affected, as will be seen by referring to the sketch. It was about the worst-looking deformity of the kind I had ever seen; the femur was flexed to the last de-

Examined September 7, 1888: She is in better health than ever before, and can walk long distances without using a cane. Has no trouble of any kind with the limb. She wore for a while a shoe on the right foot of an inch elevation against my advice. She now wears an ordinary shoe. The limb was left in sufficient abduction to compensate for the actual shortening and part of the obliquity of the pelvis. The charcoal sketches before and after the operation give a very perfect representation of this case.

CASE VI.—A. B., aged seventeen years, came under observation in November, 1884, for treatment. There were the history and the evidence locally of an old inflammation of the left knee joint, dating back to early childhood. The limb was greatly deformed, and he walked with painful inconvenience. The knee was found with very little motion, flexed at an angle of 135° , the leg being very much rotated in its relationship to the thigh; there was combined with this marked genu valgum. The compensating deformity of the foot was quite great and walking painful.

The procedure of dividing the bone was exactly as in the preceding cases, the final steps being much more difficult because of the limited motion at the knee, and the fear that it might be further damaged if too much strained by the use of the leg as a lever; but I succeeded by having the upper part of the bone fixed by a very strong assistant, then, grasping the condyles in both hands, with the application of sudden force downward, using the same fulcrum as before, the fracture was completed and the deformity overcome, after tenotomy of the external ham-string tendon. The limb was dressed in plaster, and went on to firm union as a simple fracture.

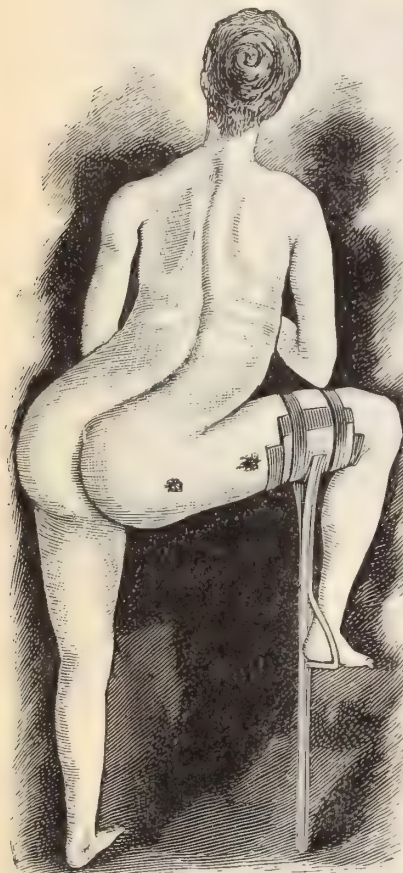
The young man now walks anywhere without difficulty, and is the possessor, comparatively speaking, of a comely limb, a compensation of an inch and a half being added to the shoe.

CASE VII.—Mr. N., clergyman, aged thirty-two, had been the subject of inflammation of the right knee when a child, resulting in a perma-

nent deformity, very much like that described in Case VI—flexion, combined with rotation of the leg on the thigh, and knock-knee. He came, he said, to consult me in regard to the possibility of having the deformity overcome, as it was particularly awkward in a public speaker. I proposed bone-breaking as a possible remedy, and after some discussion he consented. His consent was more difficult to obtain because he had consulted with an eminent surgeon in Virginia, who had warned him against letting anybody meddle with his knee. On May 10, 1886, the operation was commenced just as in the preceding case, the bone being completely sectioned, however, without the use of manual force. Hardly had two strokes of the mallet been given before a complete fracture was produced. I anticipated a retardation in the process of repair, but no trouble was experienced, and in the usual time he was able to use the limb.

I saw him on the street in April last, and he walked with little limp, and if it had not been for this, one would not notice anything the matter with him. While he is standing there is no reason to suppose him at all lame. His limb gives him no trouble.

CASE VIII.—April 15, 1888, John S., aged fifteen, telegraph



CASE V.—Before operation.



CASE V.—After operation.

gree and completely abducted; the knee could not be extended beyond a right angle, adaptation of the flexors having taken place during the twenty-two years. She had walked on a popliteal crutch. The pelvis was obliques to the right, and the spine greatly curved.

This patient had been an eye-sore to me for years on the streets, and finally was referred to me by Mr. Mathews, an artificial-limb maker, to whom she had applied for the repair of her crutch. On the above-mentioned date I divided the right femur below the trochanter, and restored the limb to a position to be used to the best advantage under all the circumstances in walking after the fashion of other people. Both hamstrings were divided, and the muscles attached to the anterior superior spinous process of the ilium also, great force being necessary to bring the limb down; the skin on the anterior aspect of the thigh looked glazed, it was put so much on the stretch. A plaster splint was applied, as in the other cases. Convalescence was uninterrupted so far as the firm union of the bone was concerned, but there was a tendency to swelling of the leg, together with anæsthesia of the parts supplied by the anterior crural nerve for six months or more.

operator, Hopkinsville, Ky. The deformity, a repetition of that in the two preceding cases, was the result of an inflammation of the right knee of only three years' standing. The procedure was carried out as in Cases VI and VII with the same result. He returned to his home on the sixteenth day wearing a posterior leather splint. There has not been sufficient time passed since the operation to determine the result in this case, but I expect just as useful a limb as in the other cases.

Cases VI, VII, and VIII illustrate how much good can be done by a bone section in a class of cases that, in my hands, have been very unsatisfactorily treated in any other way unless excision is done. You have a knee in which the patella is fixed, with flexion, rotation of the leg on thigh, and genu valgum, without the saving clause of bony ankylosis of the tibia to femur, but with limited motion, with no control of that motion. The history of these patients as to the utility of the affected limb is always the same—constantly recurring pain and disabling at the least misstep or stumping of the toe. Any movement which puts a strain on the crippled joint brings about the same result, calling for a return to the cane or more often to the crutch.

By a bone section and the substitution of an angle above for those at the knee, and at the same time rotating the leg, we place the tibia and fibula in the same axis with the femur and restore the foot to a position much better suited for walking. By the improved relationship the intermittent strains are prevented and adaptation of the ligamentous structures allowed to take place, a firmer and much better joint being the result.

RETROJECTION IN GONORRHŒA.*

By E. R. PALMER, M. D.,

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UNIVERSITY OF LOUISVILLE.

THE treatment of urethritis by continuous irrigation has been occasionally suggested since 1862. On the 22d of March, 1887, Dr. George E. Brewer read a paper on this subject before the New York Dermatological Society, in which paper the present status of retrojection and irrigation was so thoroughly and clearly brought to the notice of the profession that but little remains for me to do beyond a recital of experience in its use, and deductions from such experience. I shall therefore be exceedingly brief in what I have to say, furnishing, as it were, a short chapter on retrojection in the make-up of the gonorrhœal entity, whose construction our assiduous secretary has mapped out as our work for the first day.

It was my pleasure to hear Dr. Brewer's paper read, and afterward to see retrojection carried out at the Roosevelt. As my own experience in the matter has been wholly related to cases in private practice, I wish to especially call attention to Dr. Brewer's statement regarding retrojection in this field. He says: "I have been able to collect thirty cases, all of undoubted acute gonorrhœal urethritis, in the secretions from which gonococci were found. In all of these the recovery took place within two weeks, the

average date of recovery in the thirty cases being in 7 $\frac{2}{3}$ days."

Elsewhere Dr. Brewer, in speaking of his dispensary work, says: "Of the twenty-three cases of acute specific urethritis treated by irrigation with bichloride of mercury, marked improvement was earliest noticed on the first, and latest on the eighth day. Sixteen of these continued *until all purulent discharge ceased and were practically well.*" * At the annual meeting of the Kentucky State Medical Society in July last, Dr. E. M. Wiley read a paper on the abortive treatment of gonorrhœa by strong (1 to 6,000, 1 to 4,000) hot retrojections of mercuric bichloride, subsequent pain being assuaged by injections of cocaine. Dr. Wiley reported eight cases in which cures by this treatment had been effected in from a few days to less than two weeks. His paper contains the suggestive statement that "in several, however, a thin gleet discharge remained that was generally treated by bismuth injections."

At the same meeting, in my general report on progress in matters genito-urinary, I made the statement in reference to gonorrhœa that "it seems more and more firmly established that, be the treatment what it may, a cure in six weeks is a good result, and that a discharge from the urethra that yields to any treatment in two or four days is a bastard gonorrhœa that, in all probability, would have got well itself if let alone." This declaration, coming as it did in the face of my known practice and advocacy of retrojection and irrigation, was taken by many as a back-down on my part. I hope to-day to handle this form of treatment impartially, and to place it where it justly belongs among the curative agencies at our command. My conclusions are drawn from the observation of one hundred and twenty-seven cases of recent urethritis in private practice seen during the fifteen months ending July 1, 1888. In practice and in phraseology I distinguish *retrojection* performed with a Jacque catheter from *irrigation* accomplished with a Kiefer nozzle. In each instance the treatment is based on the doctrine of microbial origin, and the agents used are hot water and some germicide, generally the bichloride of mercury. The details of application are already public property. Their recital may be found in the "Journal of Cutaneous and Genito-urinary Diseases" for May, 1887, or in Taylor's "Clinical Atlas." The experiences of Dr. Brewer and his *confrères*, Vanderpoel, Curtis, Halstead, and others, as recounted in the journal above referred to, are considerably more favorable than my own have been, and yet I must say that the methods that they have brought into notice have served to lessen to a remarkable degree that lack of self-confidence with which I was formerly wont to take charge of new cases of gonorrhœa. The methods under discussion may be briefly stated as the twice daily washing of the urethra with a quart of, say, a 1-to-10,000 solution of corrosive sublimate at, in round numbers, a temperature of 100° F. In the discussion that followed the reading of Dr. Brewer's paper, Dr. Halstead incidentally remarked that "in the near future gonorrhœa would cease to be a malady for the physician to treat, as the men about town

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

* Italics mine.

would secure a retrojection outfit and readily cure themselves." I fear his adumbration will never become a reality. Something more is called for in the full cure of specific urethritis than the brilliant and beneficial results that so speedily follow hot mercuric retrojections, and I am quite sure, judging from my own experience, that, had the cases collated from private practice by Dr. Brewer and those reported by Dr. Wiley been kept somewhat longer under observation, not a few relapses would have been found cropping out in each field of observation. The question here of prime importance is, "When is a genuine clap genuinely cured?" Many a patient treated by any method has, after an ordinary superficial inspection, been declared well and discharged, only to have a relapse and return to the doctor, or perhaps, with greater probability, go elsewhere for further treatment. In the latter instance, of course, the case stands on the surgeon's record-book as cured.

To come to my own cases and conclusions. Of the one hundred and twenty-seven cases observed, less than the fraction twenty-seven received during treatment two washings daily. This was due not to any fault on the part of myself or my assistants, one of us being always at post, but because of the fact that in four cases out of five a man with gonorrhœa, or indeed any other malady that permits of pursuit of vocation, can not or will not go twice daily and at stated hours to the doctor's for treatment. I should of course mention that in the digest of my cases I do not include those few cases in which the patients presented once, perhaps twice, and then, breaking appointment, disappeared. Of all patients regularly treated, considerably less than 50 per cent. got *one* daily irrigation for six weeks. In my records I find that almost invariably, or at least in a large majority of cases, two or three breaks occur, due of course to the inevitable in the life of every busy man. Of all cases, of those that never missed and of the more or less irregular, I find records of but two cures within eight days. Among what I may term my good cases are: One cured in four days, one in six, one in eleven, one in fourteen, one in twenty, two in thirty, and one in thirty-one.

Among what may be denominated my bad cases are: One not cured in forty days, one not cured in forty-five, two not cured in sixty, one cured in ninety, one cured in one hundred and fifty, and one, in which the patient was put to bed in my infirmary and irrigated twice a day, with additional treatment, that got well in a little under six weeks. In all of my cases, except those few that got well rapidly, the "mixed treatment," to be referred to further on, was used.

What are the true place and value of hot mercuric retrojection? When should it be employed? And what is its status in relation to such complications as cystitis, epididymitis, and stricture? Corrosive mercury occupies in the treatment of gonorrhœa the identical position that it occupies in antiseptic surgery generally, as the antagonist of suppuration. It furnishes to the surgeon a sure and safe means by which the copious purulency of a typical gonorrhœa may be aborted in a few days, sometimes in a few hours. By its use, and with this action as just stated, there

may result now and then absolute and speedy cure. In the majority of instances cases, while not cured, are made so nearly well, are so vastly improved, as to possibly mislead both the doctor and his patient into the delusive belief that all trouble is over. It is in the management of these latter cases that I would suggest a modification in modern treatment—a modification that may be termed here, like a justly popular mode of treating syphilis, "the mixed treatment."

I do not refer to internal treatment with sandal oil or Lafayette mixture, etc. This Dr. Brewer advocates—I mean a mixed *local* treatment. I have found that after the morning washout, or between the two daily retrojections, a cure is much facilitated, so soon as the acute stage subsides, by the use on the part of the patient of some one of the standard injections. I have also learned to think well of having him bring his bottle and syringe to the office that he may follow the hot irrigation with the astringent.

After trying many medicinal agents in this mode of treatment I have limited myself to three—the corrosive chloride of mercury, carbolic acid, and boric acid; the first, which is also chiefest, to be used in water always as hot as can be borne.

In the matter of strength, the varying sensitiveness of different urethra, and indeed of the same canal at different times, calls for solutions that in this respect differ widely. To meet this I employ tablet triturates containing a quarter of a grain each. One of these to the pint represents a solution of about 1 to 30,000. Two, three, sometimes as high as six, may be used at once. In preparing each pint of wash there may be added six ounces of 1-to-100 carbolic-acid solution, partly on general antiseptic principles, but chiefly that by its local anæsthetic action the pain produced by the chloride may be materially lessened. The boric solution, saturated, is best used in the stage of decline, cold, with or without the addition of the carbolic-acid solution and with the Kiefer nozzle. A pint of solution will, with a Kiefer nozzle, balloon the average penile urethra fifty times in twice as many seconds. Toward the end of the irrigation the exit-pipe may be kept closed by the finger for a moment or two, and thus the full action of the drug be exerted upon the entire cleansed and distended surface. Tannin, sulphate of zinc, and very many of the new coal-tar derivatives have been tried with negative results. The hot bichloride solution is pre-eminently *the* agent for this mode of treatment. It does not produce epididymitis, or cystitis, or stricture. Indeed, observing the rule of immediately previous urination, it may be used in this respect with absolute safety either in the height of the acute stage or during the decline. So used, it may be relied upon to speedily reduce the discharge to that minimum that requires Ultzmann's bottle test for shreds for its detection. This done, except to prevent or correct relapse, it is my belief that mercuric retrojection or irrigation has accomplished its mission, and that other and older means of treatment, both general and local, are called for to complete the absolute cure.

721 WEST JEFFERSON STREET, LOUISVILLE, KY.

September 14, 1888.

Correspondence.

LETTER FROM WASHINGTON.

The Dissecting-room of the Georgetown Medical College.—The Government Hospital for the Insane.

WASHINGTON, November 22, 1888.

MEDICAL matters here are not very lively this winter, but with the establishment of Dr. Hammond's new hospital and the war on the Georgetown Medical College dissecting-room, we manage to keep up interest.

The dissecting-room war originated in this way: The college was built in the old residence part of the city, a portion of the capital that is gradually being given up to business, but a few old residents refuse to move out to the new northwest section, and viewed with dismay the erection of the new college among them. They were not able to do anything in the matter until this year, when one of those trying warm spells came on, and, a new janitor being employed, the wretch forgot the appliances for ventilation. The consequence was that the subjects "smelled to heaven," and then the grievance of the neighbors had an open field to work upon. They have employed counsel, and propose to drive the college dissecting-room out of town by means of a presentment by the Grand Jury. Whether they will also move on the dissecting-room attached to the Columbian Medical College, which is on the same street, and even nearer the fashionable quarter, the counsel has not divulged.

The superintendent of the Government Hospital for the Insane, Dr. W. W. Godding, has issued his annual report to the Secretary of the Interior, and it shows a steady increase in the number of inmates at that institution. There remained 1,361 patients at the close of the year. Dr. Godding speaks with approval of the regular employment of a medical officer for night service, which has been practiced for the past year. An important feature of the report is the portion furnished by the pathologist, Dr. Blackburn. When that officer was appointed he was the first incumbent of the office, and it was hoped by the Board of Visitors that much important information would be gained from the establishment of the pathological laboratory. The careful report of some post-mortem examinations of the kidneys of the insane gives the following summary:

"Of the 269 cases given in the table, examination of the kidneys was made in 263; in the others complete autopsy was not permitted, but there was no reason to suspect renal disease. The organs were in all cases examined separately, but where the appearances were similar they are described as one in the table. The hardening of the specimens was uniformly done in Müller's fluid and completed in alcohol, and the subsequent preparation for the microscope was by the usual infiltration methods; but in all doubtful and interesting cases other hardening agents and methods of preparation were used in conjunction to eliminate, if possible, any source of error. In the table are recorded the appearances of the organs, both normal and abnormal, and though at first sight it would seem that an unusual proportion of the cases were abnormal, it will be found that in a large number the deviation from the perfect standard is slight and unimportant. A slight increase in the amount of connective tissue in an otherwise normal kidney is no more important, and certainly not more frequently found in autopsies, than chronic pleuritic adhesions; and the changes in the epithelium are in a great number of cases equally trivial, being simply the result of post-mortem change or accident. In regard to the frequency of post-mortem change in the renal epithelium, my experience has been in accord with that of Dickinson and others, that the

cortical cells are remarkably susceptible to it; but, as the bodies were in all cases placed in a refrigerated chamber as soon as possible after death, the minimum of change has been assured. There are, however, many cases in which the early post-mortem change is dependent upon some antecedent condition of the epithelium predisposing to rapid disintegration both before and after death. Of these conditions the most important are cloudy swelling and fatty degeneration, its later stage. In pneumonia, pulmonary tuberculosis, febrile diseases, and primary irritative affections of the kidneys, this state of the epithelium is frequently observed, and several such cases appear in the table. The cases in which the state of the kidneys was probably dependent upon or associated with other diseases, age, occupation, etc., have not been separately designated, as these agencies have been given with this object in view. Special diseases of the kidneys have received separate mention. A synopsis of the table is appended:

"Cases in which the elements were normal.....	49
"Cases showing post-mortem or accidental change in the epithelium, but otherwise normal.....	51
"Number in which the deviation from the normal was sufficient to constitute disease, including cases of <i>senile atrophy</i> of pathological degree.....	43
"Unimportant increase of connective tissue, etc....	104
"Cloudy swelling and primary epithelial degeneration.....	2
"Cloudy swelling, secondary, at least.....	8
"Miliary tubercle, secondary.....	3
"Tubercular pyelonephritis.....	1
"Adenoma.....	1
"Hydronephrosis.....	1 "

Medicated Wines and Temperance Beverages.—The "Thirty-first Report of the Commissioners of Her Majesty's Inland Revenue" contains a variety of interesting information, covering the net receipts from excise, stamps, land tax, inhabited house duty, and income tax. While the report is largely concerned with financial details, clearly arranged in tabular form, the report by the principal of the laboratory in the appendix exhibits in small space the results of considerable labor extended over a wide range of subjects. The increasing difficulty of keeping the sale of liquids containing alcohol in legitimate channels is illustrated by reference to the so-called medicated wines, which are said to be quite suitable for use as beverages. Two liquids of semi-medical names are mentioned as only possessing "their respective prefixes to distinguish them from champagnes of ordinary quality." It has long been well known that many temperance drinks contain varying proportions of alcohol. In this report it is stated that the sample of elderberry syrup examined contained 8.7 per cent. of proof spirit, that of "non-alcoholic ginger cordial" 10.8 per cent., that of "unfermented sherry" 17 per cent., and that of "cowslip wine" (which looks oddly in this class) no less than 28.9 per cent. "Temperance" beverages have always been regarded with suspicion; but the medicated wines have been attracting the attention of the revenue officers by their flavor, and by the size and frequency of the dose recommended. Whether habits of intemperance are likely to be fostered by them is a question beyond the scope of the report, which is confined simply to the statement that an alcoholic liquid employed as a beverage of necessity becomes subject to revenue dues.—*Lancet*.

Tetanus after Hypodermic Injection.—"A child six years old suffering from miliary fever," says the "Lancet," "was treated first with quinine administered in pilules and by inunction, and then by a subcutaneous injection of the alkaloid. One month later the fever had disappeared, but the child complained of pains in the left arm and at the point of injection; trismus supervened in three days, tetanus developed, and death occurred on the sixth day. If this was really a case of traumatic tetanus, the period of incubation was rather longer than the usual seven to fourteen days."

THE
NEW YORK MEDICAL JOURNAL.
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 1, 1888.

AIR TREATMENT AND WATER TREATMENT.

HYDROTHERAPEUTICS comes in for its share of recognition or disdain, like every other special method of therapeutics, according to the standpoint of its critics. Differences of opinion arise not from knowledge, but from ignorance. Orthodoxy and heterodoxy exist even in medicine, and the laws governing them are just what they always have been. Air treatment and water treatment fare no worse than other special measures. The humorist whose acquaintance numbers many physicians seldom finds his occupation gone, or even going, and learns by frequent experience that there is a time to laugh. Specialists have a way now and then of viewing the professional world at large from a height, and criticising the scenery with dispassionate coolness most beautiful to behold. According to the kaleidoscopic standpoint, the surgeons have all gone mad, the gynecologists ought to be murdered, neurologists are quite beyond belief, a plaster jacket is the deadliest of infernal machines, there is nothing in electricity, systematized mechanical exercises savor strongly of quackery—and more indefinitely of this same judicial pattern. A literal interpretation of the doleful presentment almost prompts the retentive listener to agree henceforth and forever with the cheerless Oxford student that nothing is worth while and it does not much matter. The humorist laughs last and best, rejoicing that truth is not a monopoly, but exists at the top—where there is always room for more of it—at the bottom, and all the way up and down the medical profession.

The laity also has its prejudices. Systematized hygiene in an appropriate locality, as a means of cure, does not appeal to every sufferer. This age affords such rare opportunities for æsthetic invalidism that getting well off in a corner, so to speak, seems to the professional invalid a waste of valuable material.

The average patient finds taking something far more attractive than working for his health. It is such a bore to do things, even when a prophet does command it. Yet a life of rule and discipline in a new environment, early rising and early going to bed, regular and sufficient open-air exercise under a watchful and ever-present eye, away from the interruptions, duties, cares, and habits of home surroundings, is the kind of existence best suited to a large class of those who suffer from various degrees of invalidism. There are many chronic diseases differing in kind, but having this in common, that, either from the constitutional state or from the nature of the malady, drugs alone are little better than useless. For these, bold yet skillful treatment of an entirely different kind will avail. To break up the tiresome old vault of heaven into new

forms is the first essential. The patient must go into another business—that of getting well. He must live for a time almost exclusively for self, that years of self-forgetfulness may be the reward of this personal sacrifice. A mountain region with its dry, bracing air, and pure water, to say nothing of restful vistas for the eye, presents the most favorable external conditions to bring about this end. The chronic dyspeptic is a good example of a class that not all the skill of the general practitioner can materially aid with the ordinary means at his command. These are cases for the specialist in hydrotherapeutics—a physician who undertakes to treat a certain class of patients in a way that the general practitioner knows to be best, but has not himself the means of carrying out. This is the hydrotherapist's chief province, and, if honestly held to, is a very useful one. The chronic dyspeptic complains that he can not eat; a tonic in this instance is but a spur to a lame horse. He can not sleep; opiates but mask the mischief. He is told what he needs—a complete change of life and for a sufficient length of time, fresh air, regular dieting, and a system of baths, which, by acting on the skin, will relieve the organs of digestion, and, by acting on the nerves, will give those same organs a good start for a better running. A break-down from years of overstrain is not an affair of trying something for a week or two, whether that something is special treatment at a sanitarium or anything special at home. Time, the great restorer, is a factor of importance. The man about town, with a good frame to start with, may get the better of his troubles and keep himself in trim by a month's asceticism in the course of each year. There is another sort of nervous dyspeptic who is the product of work, worry, and waste. It is not unreasonable to ask for two or three months to restore this blighted being. Where is the error first, in the nerves or in the digestive organs? As the student answered that celebrated question: "Does the sun go round the earth, or the earth go round the sun?" the facts of the case reply: "Sometimes the one, and sometimes the other." Frequently nervous symptoms disappear as the digestion improves. But when the earth goes round the sun, so to speak, the process is slow and scarcely to be noted. It is not that the wheels are clogged, but that they never ran true.

The "Practitioner" for July, 1888, contains a paper on hydrotherapeutics and its place in medical science. The authors state quite frankly that the success of water applications depends mainly, not on the ingredients of the waters drunk or bathed in, not on the temperature of the baths, their time of application, or the length of cure, but upon the precision with which the treatment is conducted, the skill with which it is adapted to the characteristics of the patient, and the watchfulness with which complications are foreseen, met, and averted. A discriminating medical man can accomplish more with an inert water than the routinist can with a most potent and appropriate spring. Baths, packs, fomentations, etc., must be mixed as the artist mixed his colors, "With brains, sir!" Imagine that our friend, the nineteenth-century dyspeptic, arrives at an institution where this excellent practice prevails—

weary, jaded, without appetite, sleepless, and not too happy in the matter of temper. In the morning he is introduced to the sheet or towel pack, then soused in a cold or tepid bath according to the season or his own reactive power, this last point being of great importance and one that requires the nicest discrimination. A walk of some ten minutes or so afterward, enough for reaction but not for fatigue, finds him the surprised possessor of a good appetite for breakfast; if not to-day, then shortly. The Turkish bath or its modified form, the lamp bath, is a veritable skin-compeller, making the outside of us do a little hard work for an overburdened interior. Cold or tepid sitz-baths and divers kinds of spinal rubbings—especially with mustard, an agent of far greater value than its simplicity suggests—are some of the chief forms of water application relied upon in ordinary cases. Air, exercise, rest, and recreation also play an important part. That they are not enough in themselves is proved by the experience of patients who have tried them alone, and afterward in conjunction with special treatment.

Though chronic diseases—digestive and nervous disorders, skin troubles, the syphilitic taint, etc.—are those most benefited by the hygienic measures included in the term hydrotherapeutics, simple water applications are of much service in acute cases, such as fevers, pneumonia, and peritonitis. Take, for instance, that compound of flannel and water, the fomentation, so useful in bronchitis or pneumonia. It must be properly applied or it is only a source of added worry. A thick pad of flannel carefully sewed together—not loose folded flannel—wrung out dry from hot water at a temperature just bearable, is applied to the chest and a blanket wrapped round, all being done with the greatest speed to avoid exposure, and the application renewed every ten minutes. After an hour's application, the surface of the skin is rubbed with a cold or tepid towel, and then with dry flannel. The fomentation as a counter-irritant is quite as effective as a mustard plaster or a turpentine stupe, never frays the skin, may be repeated as often as required, and is soothing and sleep-producing. This same fomentation over the abdomen combats insomnia successfully. A cold-water compress at night, well covered with flannel, has again and again dispersed what promised to be sore throat; and hot and cold water in headache are remedies almost too trite to mention.

In what waters shall we wash and be clean? In the springs at home whenever possible, and abroad whenever necessary. The iodine and bromine waters of Kreuznach and Soden are adapted to chronic disease of the scrofulous type, while the sulphur waters found at Eaux-Bonnes, Bagnères de Bigorre, and Luchon exercise their special virtues in recurring catarrhal disorders of the pulmonary or digestive tract, and are of marked benefit when herpetic affections exist. The waters of Mont Dore, Bourboule, and Royat are of service in virtue of the arsenic they contain, and still more owing to their mode of application. For neurasthenics and dyspeptics, the dry, bracing air, pure water, and easily obtained hill exercise of such places as Tunbridge Wells, Buxton, and Malvern

can not be excelled if their natural advantages are supplemented by a course of rational hydrotherapeutics. The Delaware Water Gap region rivals the English resorts; and the sanitarium at Experiment Mills, Pennsylvania, three miles back of the Gap proper, is said to unite all the requirements of situation, beauty of scenery, and sensible management. More accessible than Bagnères de Bigorre and of the same class are the Rock Alum and Rockbridge Alum Springs. The water of Eaux-Bonnes is somewhat like that of the Greenbrier White Springs of West Virginia. It is almost always possible to find on this side of the Atlantic springs and localities as useful as European resorts. But the extra-medicinal factors, the mechanics of the situation, are too often in a crude state. This is not always so. As Dr. Coan says, when we come to have more of such admirably appointed establishments as the sanitarium at Dansville, New York, foreign travelers will frequent our waters as we do theirs at the present time. For the overstrained inhabitants of large cities, jarring their brains and spinal cords by the continual treading of stone and brick on an almost uninterrupted level, wearied by incessant noise and the absence of any wide range for the eye, with nothing in particular for the arms to do at any time, and the consequent lessened chest expansion, air treatment and water treatment hold a unique place as restorative measures. Such a hygienic course as has been indicated is entitled to a recognized place in the list of scientific methods.

MINOR PARAGRAPHS.

THE NERVOUS TROUBLES OF OLD SOLDIERS.

DR. HORACE P. PORTER, of Oneida, Kansas, who was a medical officer in two Connecticut regiments during the War of the Rebellion, lately read a paper on this subject before the Northern Kansas Medical Society. The defects to which he alludes betray themselves for the most part by muscular unsteadiness, so-called rheumatic pains, and premature senility, all of which he traces to the privations and insalubrious surroundings incident to military service. We regret to learn that "a tendency to mendacity" is one of the manifestations, but are consoled to read that it is "one of the rare and extreme forms." Dr. Porter suggests, doubtless with much justice, that the nervous debility engendered by the hardships of war often renders the old soldier an easy prey to acute disease that he might otherwise survive, and he thinks that this consideration ought to be taken into account by the family physician in its bearing upon the title to a pension.

PRIMARY ERYSIPELAS OF THE LARYNX.

THE "Centralblatt für Chirurgie" publishes an abstract, by Dr. Riedel, of Jena, of an article on this subject, by Dr. A. Bergmann, in the "St. Petersburger medicinische Wochenschrift." The author cites Parter's case, which, he says, was the first one reported, and gives an interesting summary of Massei's account of the clinical history of the affection. In his own case a boy three years old was attacked, during an elder brother's convalescence from erysipelas, with high fever, decided swelling of the epiglottis, the arytaeno-epiglottic folds, and the arytaenoid region, great tenderness of the cervical glands, and slight stenotic breathing. Tracheotomy was done on the evening of the first day, and on the following day the

patient's general condition was good, but there was a transitory erysipelatous reddening of both upper arms. The boy recovered. The author lays stress on the rapidity with which laryngeal stenosis may take place, and on the consequent need of being prepared to perform tracheotomy at any moment.

BLINDNESS DUE TO WHOOPING-COUGH.

In the "Deutsche medicinische Wochenschrift," Dr. Alexander, of Aachen, contributes to the scanty literature of this subject the histories of two cases. In one of them, that of a boy three years old, the blindness came on suddenly, the pupillary reaction being preserved and the fundus oculi presenting a normal appearance. The trouble was imputed to cerebral cedema situated between the region of the corpora quadrigemina and that of the occiput, which subsequently spread and proved fatal. In the second case, that of a girl twelve years old, the loss of sight was preceded by brain symptoms and was attributed to optic neuritis *ex meningitide*. The pupillary reaction, which had been lost, returned with the absorption of the meningitic exudate, and visual power was gradually regained. An abstract of the article is to be found in the "Centralblatt für klinische Medicin."

SCARLET FEVER INDEPENDENT OF INFECTION.

SURGEON-MAJOR R. D. MURRAY, of the British East Indian Service, states, in an article published in the "Lancet," that scarlet fever is extremely rare in India. He then proceeds to give an account of a case in which the disease seemed to him to develop *de novo*, and which he regards as "a refutation of the theory of the bacillary origin" of scarlet fever. In the history given we see no convincing evidence that the case was remarkable in any other way than as an example of the transmission of infection by unknown channels, a matter of not very uncommon occurrence.

THE REPRESSION OF MENSTRUATION AS A CURATIVE MEASURE.

THE November number of the "American Journal of Obstetrics and Diseases of Women and Children" contains an article by Dr. Eugene C. Gehrung, of St. Louis, in which, after mentioning certain considerations tending to show that menstrual loss of blood was not originally physiological, but is "a product of civilization," he asks how much blood it was Nature's intention to waste in the process, and answers: "Little in the strong and healthy; little or none in the weak and anæmic." In women of the present time, he thinks, the flow is usually "greatly in excess of the actual want," and he would moderate it by means of vaginal tampons, which, he says, not only lessen the loss of blood, but diminish the duration of menstruation. He has not observed any unpleasant results from the practice, but he regards Löwenthal's measures for accomplishing the same purpose—chiefly by the use of injections, sometimes of iced water—as of doubtful propriety because of their uncertainty and dangerous character.

PAGET'S DISEASE OF THE SCROTUM.

At a recent meeting of the Pathological Society of London, reported in the "British Medical Journal," Dr. Radcliffe Crocker gave the history of a case that he regarded as one of Paget's disease affecting the scrotum. In a man sixty years old, there was superficial ulceration on the anterior part of the scrotum and the lower surface of the penis, somewhat resembling an eczematous excoriation, but deeper and more sharply defined. After rather

more than a year of ineffectual treatment, both internal and topical, two firm nodules were found to have formed. At that time the malignant nature of the disease was apparent, and its similarity to Paget's disease of the nipple was recognized. The whole diseased area was cut out, and six months later there had been no recurrence. The microscope showed an alveolar structure, the stroma being here scanty and there abundant, and the alveoli containing aggregations of small epithelioid cells, suggestive in many respects of the structure of rodent ulcer. The process seemed to have originated in the sweat glands.

THE MEDICAL COLLEGE OF VIRGINIA.

DR. J. N. UPSHUR, professor of materia medica, etc., in the Medical College of Virginia, reminds us that, in our report of the proceedings of the recent meeting of the Medical Society of Virginia, we omitted to mention, on page 582 of our last issue, that Dr. Chancellor's resolution renominating the present members of the Medical Examining Board of the State was seconded by Professor J. S. D. Cullen, dean of the faculty of the Medical College of Virginia, who at some length refuted certain charges and misrepresentations as to the attitude of that faculty toward the State Examining Board, and showed that the faculty was in thorough accord with the board in its efforts to raise the standard of medical education. Our omission to mention this action on the part of Dr. Cullen was wholly due to inadvertence, and we are glad now to give the substance of Dr. Upshur's communication.

ANTISEPTIC IRRIGATION OF THE LARYNX.

IN a "Thèse de Paris," a notice of which appears in the "Progrès médical," Dr. W. P. Davis describes a method of treating laryngeal diphtheria by antiseptic irrigation of the larynx. Tracheotomy is performed, a tube with a shield of somewhat peculiar construction being employed. Above the opening of the tube there is a hole in the shield, through which a spray-producer is passed into the larynx. Below the delivery openings of the spray-producer there is a rubber bag which, on being inflated, acts as an obturator preventing the downward flow of the liquid. Various modifications of the instrument are described and figured. It is said that this method of spraying the larynx does not give rise to distress.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 27, 1888:

DISEASES.	Week ending Nov. 20.		Week ending Nov. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	21	9	15	5
Scarlet fever.....	130	2	148	28
Cerebro-spinal meningitis....	0	0	2	0
Measles.....	221	7	263	8
Diphtheria.....	92	28	121	41
Small-pox.....	0	0	1	0

The Health of Kansas City, Mo.—For the two weeks ending Saturday, November 24th, according to the city physician's report, there were 84 deaths, including 1 from cholera infantum, 2 from croup, 1 from diarrhœa, 1 from diphtheria, 2 from dysentery, 6 from malarial fever, 3 from typhoid fever, 4 from typho-malarial fever, 2 from marasmus, and 1 from meningitis. The death-rate for each week was 12.1 in a thousand of the population.

Visiting Lists for the Coming Year.—Two of these publications have reached us, both from Philadelphia. They are Messrs. P. Blakiston, Son, & Co.'s and the "Medical News" Visiting List, issued by Messrs. Lea Brothers & Co. Both present the neat appearance and convenient arrangement noticeable in the past, and will doubtless continue to prove very serviceable to physicians.

The Death of Professor Heinrich von Bamberger, of Vienna, is announced in the "Internationale klinische Rundschau." The deceased was born in Prague, in 1822.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 18 to November 24, 1888:*

SMITH, JOSEPH R., Lieutenant-Colonel and Surgeon, after being relieved by Lieutenant-Colonel Alden, will report in person to the commanding officer, Department of Arizona, for duty as medical director of that department, relieving Lieutenant-Colonel Richard H. Alexander. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

ALEXANDER, RICHARD H., Lieutenant-Colonel and Surgeon, by direction of the Secretary of War, is granted leave of absence for four months, to take effect from the date of his relief from duty as medical director, Department of Arizona, by Lieutenant-Colonel and Surgeon Joseph R. Smith. Par. 11, S. O. 268, A. G. O., Washington, November 16, 1888.

ALDEN, CHARLES H., Lieutenant-Colonel and Surgeon, is relieved from further duty at the U. S. Military Academy, West Point, New York, and will report in person to the commanding general, Department of Dakota, for duty as medical director of that department, relieving Lieutenant-Colonel and Surgeon Joseph R. Smith. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

SMART, CHARLES, Major and Surgeon, by direction of the Secretary of War, will proceed to Milwaukee, Wis., to represent the Medical Department of the Army at the meeting of the American Public Health Association in that city, November 20 to 23, 1888, and, upon the adjournment of the association, will return to his proper station. Par. 2, S. O. 268, A. G. O., Washington, November 16, 1888.

NEWTON, RICHARD C., Captain and Assistant Surgeon, by direction of the Secretary of War, is granted leave of absence for four months. Par. 16, S. O. 272, A. G. O., Washington, November 21, 1888.

WOOD, MARSHALL W., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in Special Orders No. 257, November 3, 1888, from this office, is extended ten days. Par. 12, S. O. 270, A. G. O., Washington, November 19, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 24, 1888:*

HEFFINGER, A. C., Passed Assistant Surgeon. Ordered to the U. S. S. Kearsarge.

BRYANT, PATRICK H., Assistant Surgeon. Ordered to the Naval Hospital, Brooklyn, N. Y.

MCMURTRIE, DANIEL, Surgeon. Ordered to the U. S. Receiving-ship Vermont.

DRENNAN, M. C., Surgeon. Detached from the Vermont and ordered to the Atlanta.

WINSLOW, G. F., Surgeon. Detached from the Atlanta and placed on waiting orders.

MCCLEURG, W. A., Passed Assistant Surgeon. Detached from the Tallapoosa and ordered to the Kearsarge.

VON WEDEKIND, L. L., Assistant Surgeon. Ordered to the New Hampshire.

HEFFINGER, A. C., Passed Assistant Surgeon. Detached from the Kearsarge and ordered to the Tallapoosa.

STEPHENSON, B. F., Surgeon. Detached from the Navy-yard, Boston, and ordered to the Wabash.

OBERLY, A. S., Medical Director. Ordered to the U. S. S. Richmond.

JONES, W. H., Surgeon. Detached from the U. S. S. Richmond and to wait orders.

Society Meetings for the Coming Week:

MONDAY, *December 3d*: New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians (annual); Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Chicago Medical Society.

TUESDAY, *December 4th*: New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg Medical Association; Medical Societies of the Counties of Herkimer (semi-annual—Herkimer) and Saratoga (Ballston Spa), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Southern Surgical and Gynecological Association (first day, Birmingham, Ala.).

WEDNESDAY, *December 5th*: Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of the City of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Southern Surgical and Gynecological Association (second day).

THURSDAY, *December 6th*: New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Southern Surgical and Gynecological Association (third day).

FRIDAY, *December 7th*: Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *December 8th*: Obstetrical Society of Boston (private).

OBITUARY NOTES.

William J. Simon, M. D., of the navy, surgeon of the steamship Boston, died on Monday, the 26th ult., of yellow fever. The deceased, who was a native of Pennsylvania, was appointed an assistant surgeon in the navy in 1864, promoted to be a passed assistant surgeon in 1867, and made a surgeon in 1875.

Letters to the Editor.

AMERICAN INSTRUMENTS AND MEDICINES ABROAD.

NEW YORK, November 14, 1888.

To the Editor of the New York Medical Journal:

SIR: Now that the question of a protective tariff appears to have been settled for the present, I should like to ask attention to the following extracts from English sources as bearing upon

the proposition lately made by a Southern medical society that surgical instruments should be freed from customs duties to enable physicians to obtain cheaper and better appliances of this character. The first relates more particularly to this topic, and the second is of interest in the same connection.

During the latter part of the year 1886 the London "Daily Telegraph" published an extensive correspondence upon the commerce of Great Britain and its colonies, in the course of which an Australian wrote as follows: "At the Melbourne Club, one evening, an eminent medical man told me that the surgical instruments with which he was supplied from England were utterly useless to him, and that he was obliged to send to New York for instruments that were really serviceable. Another and more unseemly device practiced at home is to send out boxes and cases, and boxes of lozenges, pills, and jujubes, only three quarters filled."

In an interview with Mr. Alfred Felton, of the Australian firm of Felton, Grimwalde, & Co., of Melbourne, by a representative of the "British and Colonial Druggist," the reporter remarked that "in the matter of the sale of pharmaceutical preparations in the colonies it is sometimes said that America is getting ahead of us," to which Mr. Felton replied:

"Well, at the antipodes there is an equal field for all comers, such as it is. There is a preference for English goods, and England at present undoubtedly has the market. Not only English and American pharmaceutical specialties, but German and French also have been introduced into Australia. Some of them succeed on their merits, and others owing to the way in which they are advertised. Now, our American friends are great in this latter department, and this, in conjunction with the admirable way they get their goods up, materially assists them in obtaining a very good position with the public. The English producers, therefore, although they command the market now, will have to bestir themselves and use all their intelligence to thoroughly adapt their goods to the colonial requirements, or they will lose ground."

F. A. CASTLE.

BOILED SILKWORM-GUT SUTURES.

COLUMBIA HOSPITAL, WASHINGTON, November 15, 1888.

To the Editor of the New York Medical Journal:

SIR: From articles lately published in the leading journals of America and Europe, I am led to the conclusion that, in spite of the demand for a reliable aseptic animal suture, the properties of silkworm-gut are not generally known; and I wish to call attention to the following facts which, in my opinion, render it the nearest approach to perfection of any animal suture now known:

1. It is not injured or changed by prolonged boiling nor by long immersion in aqueous antiseptic solutions, and may therefore be easily sterilized by boiling, and kept aseptic in wide-mouthed phials of sublimate or carbolic-acid solution.

2. It is as strong as silk and, after soaking, nearly as pliable, is freer from twisting and kinking, and easier to pass through the needle's eye than either silk or catgut.

3. It resists absorption longer than other animal tissues.

4. It is easy to tie, and the knots, if well tied, never slip. Every fisherman knows that a knot well tied in gut is tied to stay.

5. It may be split into fine threads for delicate work, and is obtainable when desired in lengths of eighteen or twenty inches.

It has been used with great satisfaction in this hospital for perinæorrhaphy, trachelorrhaphy, and other operations, the gut used having been boiled by myself for an hour, and the union in every case having been perfect and entirely without suppuration.

W. P. CARR.

Proceedings of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Twelfth Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, Dr. I. E. ATKINSON, of Baltimore, in the Chair.

The President's Address.—In his address the PRESIDENT said that the student owed to Hebra the beginnings of a classification of diseases in dermatology based on the foundation of pathology, and it was only by following on in this line that we could hope to make the greatest progress. But simple enumeration of pathological changes was not definite enough for our purposes, for we often found examples of similar effects which were the result of very different causes, and, on the other hand, the same cause might produce at different times, and under different circumstances, results which seemed quite unlike. It was, then, to ætiology, as the soul of pathology, that we must turn our attention.

The first proposition was illustrated in the diphtheritic membrane which was seen during the course of diphtheria, and the membrane which was seen in scarlatina, and which could not be distinguished from the former. A nephritis might be set up by the poison of scarlatina, of small-pox, of malaria, or by the action of certain drugs, the resulting lesion being very similar in all the cases, since Nature used the same weapons against enemies which came under different standards. Witness also the alopecia of tropho-neurotic origin and that resulting from syphilis; the herpes of pneumonia and that resulting in malarial fever; the eruption of German measles and that of the ordinary form of measles.

It had been supposed that micro-organisms were the direct cause of pus-formation, but further researches seemed to show that not the organisms themselves but their products—the ptomaines—were the active element in the suppuration, for these products were able to produce the pus without the micrococci themselves, while the micrococci alone were inert. It had been found that the *Staphylococcus pyogenes aureus* produced ammonia, and it might be that this was the active agent in the formation of pus, since a sterilized solution of ammonia would cause suppuration. In all suppurations of the skin the ætiological factor became of prime importance. Bockhart had found that the suppuration of impetigo, furunculosis, and sycosis was due to the action of the *Staphylococcus pyogenes aureus* and *albus*. These bacteria were found also in the secondary results of specific action. In the pustules of variola, for instance, the *Staphylococcus aureus* was found, and to this was ascribed the pus-formation, though not the contagion. So it was probable that there were many so-called skin diseases where the lesions were but the local manifestation of a general disease, where the local poison obtained a foothold in a tissue already weakened by some specific agent. In such a class, perhaps, might be classed dermatitis exfoliativa, pemphigus, dermatitis herpetiformis, and others of that sort. In the dermatitis herpetiformis of Duhring there had generally been found lesions connected with the cerebro-spinal system, or tuberculosis; but as yet there had not been found any constancy of lesions which would enable them to be called a well-defined pathological group. If it was true that the eruption was a secondary lesion, due to nervous or vascular irritation, then the disease deserved a place in our textbooks only as we admitted purpura and other disorders which we recognized as largely symptomatic. It was the task of pathology to discover the relation between the general disease and the secondary manifestations; but until our knowledge became

more definite we could not hope that our classification of disease would prove more than tentative; and until that time came we should have to treat diseases for what they appeared to be rather than for what they were.

The Electrolytic Decomposition of Organic Tissues.—

Dr. G. H. ROHÉ, of Baltimore, read a paper on this subject. (See page 589.)

Dr. HEITZMAN, of New York, spoke of the favorable results reported by Dr. Hardaway, of St. Louis, in the treatment of keloid. Althaus, of London, had first introduced the treatment, some twenty-five years ago, but when he was here last year he had told the speaker that he had given up the use of the treatment, as he considered it of no value. The speaker had tried it in one case, but without result. He would like the experience of others in the same cases.

Dr. R. B. MORRISON, of Baltimore, had had good results sometimes in the growths that came in the scars of operations. In one case a scar that had been raised half an inch had been rendered flat and white, and the superficial veins had been cut off. In one case of keloid in the negro he had had a good result.

Dr. G. H. FOX, of New York, had tried the treatment in four or five cases of true keloid, and also in hypertrophic scars, but had been able to get only a temporary benefit resulting from the cutting off of the superficial vessels. In one case where he had treated tumors, and had expected to get good results, the effect had seemed to be an increase in the size of the larger tumors and the formation of smaller ones.

Dr. ROHÉ said, in conclusion, that he had had no opportunity of trying the current on the true keloid, but he had been able to reduce the size of the hypertrophic scars. Since the report of Dr. Hardaway's first publication Dr. Broeck, of Paris, had used electrolysis in keloid, and reported at length a number of cases in which it had been used successfully.

The Value of Salicylic Acid in Dermatology.—Dr. C.

HEITZMAN, of New York, read a paper on this subject, in which he said that he had been using the remedy for the last three years, in conjunction with his son. It had two well-marked properties. The first was the peculiarity of acting on the horny layers of the epidermis. There was no agent so active in softening, and at last destroying, the epidermal formations as was salicylic acid. Its other action was as a parasiticide. These two properties opened a large field for research. We should be careful not to include cases where we had merely impressions as to its value; but there were many cases in which there could be no question as to its utility, and in some of these it had never been used before. The remedy might be used as a powder, as a plaster, or in the alcoholic solution. It had the advantages that it did not discolor the skin or linen, and had no odor. It was used in twenty-four kinds of cases. In hyperidrosis its action was well known. The German soldiers used it in a one-per-cent. salve of tallow, applied to the feet when upon the march. In seborrhœa, especially when combined with acne, it had given brilliant results. One per cent. of the acid with six to eight per cent. of sulphur was an excellent application for dandruff. A prescription with tar the reader liked better, but it was less agreeable to the patients. In urticaria it was an excellent means of allaying the itching. In furunculosis an ointment of six to ten per cent. had prevented an outbreak and checked the disease. But, to be sure of results, the quality of the acid must be guaranteed. In two cases, where the prescription had been filled at random, there had been no good result, but when Scheering's salicylic had been substituted the effect had been immediate.

In one case of dermatitis herpetiformis a lotion of the acid had proved the best thing the patient had tried, although it had not been capable of smothering the disease or preventing recurrences. In psoriasis, after the chrysarobin and tar, it was the

very thing to be applied, though the peeling off of the scales was not so rapid as with other remedies. In lichen planus salicylic acid was far superior to carbolic acid or corrosive sublimate. It could also be applied over a larger area with safety. It allayed the itching, removed the scales, and flattened down the papules. The author had prescribed three-per-cent. solutions, which were to be diluted at the beginning of treatment. Six cases were treated, and all did uniformly well without the administration of arsenic.

In all varieties of eczema the results had been satisfactory. Ninety-six cases had been treated, generally by the use of one per cent. of the acid, with equal parts of zinc-powder and starch, in two parts of ointment. If it was eczema madidans, one half per cent. was better. Sometimes it might be used as high as ten per cent. where there was great thickening in the very chronic cases. As the acid did not attack the connective tissue, there could be no caustic effect. In acne a three-per-cent. solution would remove pigment patches, assist in removing comedones, and render the skin soft. In acne rosacea the results were good, but in sycosis less good. The remedy did not seem to penetrate deep enough between the furrows. In impetigo contagiosa it was the remedy which would cure the disease in ten or twelve days. If combined with the liquor gutta-perchæ and some oil to make an emulsion, it would adhere to the skin. In keratitis senilis, callosity, clavus, and verruca its action in removing the thickened portions was well known. In ichthyosis it was easy to remove the scales, but they would return. In lupus erythematosus and lupus vulgaris the results had been brilliant at first, the excrescences flattening down rapidly at first, but not a case had been cured. For pruritus, in the shape of a lotion, it was excellent. In tinea the solution with gutta-percha was better than Taylor's remedy. But generally the disease would not be cured by any one remedy, and we were only too glad to have more than one. In tinea versicolor a one-per-cent. solution was effective.

Dr. PYE SMITH, of London, spoke of his use of the remedy in the hypertrophic inflammations in the soles of the feet and the palms of the hands where there were fissures; here the effects of the remedy were wonderful. He could corroborate what Dr. Heitzman had said in reference to the use of the remedy in furunculosis, especially as it occurred in youths or school-boys sometimes for months together. He believed that the contagion was carried from one point to another in the dressing. In the treatment of the individual pustules he always hardened the surrounding skin by bathing it in lead lotion, thus giving less opportunity for the invasion of the micro-organisms than did the old method of poulticing, which made the skin sodden and readily permeable. In lichen planus he had tried the salicylic acid with some success, but had found it difficult to follow the cases closely enough to be sure of his ground. He would prefer to wait till more material had been collected. In general, he felt that there were not enough cases to warrant definite conclusions. The speaker expressed his gratification at the reception he had received, and at the progress which dermatology had been making in this country within the past few years, and he felt that that progress was small compared with what would be accomplished in the years to come.

Dr. L. D. BULKLEY, of New York, had used the remedy largely in many of the cases referred to, and would mention particularly hyperidrosis of the axilla in ladies. He used with great confidence a ten-per-cent. powder, with one drachm of oxide of zinc and the rest starch. In eczema he thought that we must be careful. He had seen acute attacks started up by it. He would also mention favus of the scalp, in which he considered it very valuable in the form of a strong lotion. He had several cases now under observation for several months,

and it had not yet returned. It was good in seborrhœa, but, if it was too strong, even when mixed with oil, the patients would come back and say it was too drying.

Dr. Fox had used it a good deal in cases of general eczema and psoriasis when he wished to soften the skin and remove the scales.

Dr. A. VAN HARLINGEN, of Philadelphia, used it in the treatment of chronic eczema of the legs in a paste with glycerin and zinc oxide, made into a paste with five per cent. of the acid. If it was carefully applied, the patients would go for from three days to a week without redressing.

Dr. E. B. BRONSON, of New York, thought that in most cases we used the remedy as a preliminary measure, as it prepared the surface for other remedies. This was true especially where there was an enormous accumulation of the epidermis, as in cases of seborrhœa. In these cases he had generally been obliged to resort afterward to some other remedies. As to the manner in which the acid performed its work, he did not think we yet knew its whole action, and he quoted Unna as saying that it would demand further research. At present he thought its curative properties were limited to the cases in which it exerted its germicidal action.

Dr. HEITZMAN said that the field of the remedy in hyperidrosis would extend to any portion of the body which was affected, insulating especially the folds of the groin and the genital regions.

Anthrarobin.—Dr. BRONSON read a paper on a new remedy which he said was manufactured by Liebermann, a Berlin chemist, and was first employed on theoretical grounds, on account of its resemblance to other remedies of known value. Alizarine belonged to the same class, and from this anthrarobin was formed by a simple process of reduction. It was a powerful oxidizing agent, one gramme taking up 120 c. c. of oxygen. It was a yellowish-white, granular powder, sparingly soluble in chloroform and ether, readily soluble in alcohol and weak alkaline solutions. It mixed readily with fats in the formation of salves. The presence of an alkali increased the reducing effect. The author had treated cases of psoriasis at the Charity Hospital, applying anthrarobin on the right side of the body and chrysarobin on the left side. It was used in a ten-per-cent. mixture with vaseline, and once a day an alkaline bath was given before the application. Out of the eight cases treated, the first five had been somewhat surprising. Improvement had begun sooner and gone on more rapidly on the right side, but after the applications had been stopped there had been more recurrences on the right side. In the three other cases the alkaline baths had been omitted, and the improvement had been more marked on the left side; but as soon as the baths had been commenced the right side had begun to improve more rapidly. The staining was of a dark brown, and deeper than with chrysarobin, but it was limited to the area to which it was applied. In only one case, and when a twenty-per-cent. application had been made, had it been irritating. In a very marked case of eczema seborrhœicum the effect had been very marked. It had no antipruritic effect. In diseases in which the indication was for a purely keratoplastic agent, or in such conditions as obtained in the old stages of eczema, there was reason to hope that the new remedy might render considerable service.

Dr. HEITZMAN had seen its effects in a case where it had been applied carelessly, and had made up his mind he would not use it. It was less powerful than chrysarobin, and just as nasty as pyrogallie acid.

Dr. P. A. MORROW, of New York, had seen the patients treated by Dr. Bronson, and could confirm his statements of the value of the remedy. Anthrarobin was less irritating and less curative than chrysarobin. He thought the remedy would be used in a good many cases of psoriasis where the skin was deli-

cate, where the stronger remedy would not be tolerated, either from its irritating action or from some idiosyncrasy.

Dr. BRONSON pointed out that, while the new remedy was less likely to irritate than chrysarobin, and seemed of less curative action than that drug, yet it was to be borne in mind that it might set up a dermatitis.

Personal Observations on Skin Diseases in the Negro.—

Dr. R. B. MORRISON, of Baltimore, read a paper on this subject in which he said that the negro seemed less liable than the white to diseases of a severe type. The skin was coarser in all its elements, and was less sensitive to poisons, to nervous lesions, or to constitutional or general influences. The difference in the blackness of the pigment granule determined the shade, there being no difference in thickness of the pigment layer in the black and the mulatto. Five hundred cases of skin diseases had been tabulated. In general, the nearer the color approached to white the less difference there was in the character and frequency of the diseases. Acne was very rarely seen; more frequently in the mulatto. In chancre the induration was more marked. Chilblain was less frequent and less troublesome than in the white. Chloasma showed itself as whitish spots, and the treatment was reversed, for we must produce pigment. Erythema multiforme had been seen in two cases where the hands had been used in scrubbing; there had been burning and itching, but no redness. In erythema nodosum there was less pain but more itching. It was seen on the legs. Acute eczema showed 19 per cent. as compared with the 30 per cent. of whites. It occurred in spots, and looked like dust on a black coat. It was more amenable to treatment than in the white. Cases of chronic eczema were seen in the men who worked at oyster-shucking. Nothing but a change of occupation would cure it. Favus was rare, as also was furunculosis. Herpes facialis was common in the babies, as the result of the sugar-tit, which was a piece of bacon dipped in molasses and wrapped in a piece of linen. Zoster produced less pain and ran a shorter course; keloid sometimes followed. In impetigo contagiosa there was more itching, and the crusts were more yellow. It might be confounded with herpes in the diagnosis.

Keloid was more common. Two cases had occurred after small-pox. In the mulatto it was almost as uncommon as in the white race. Lupus was rare, which seemed peculiar, in view of the bad habits of the negro. Keloid had followed in the case of the one noted. When the tubercles healed they left a white spot. Lymphadenitis was very common; suppuration was slow, and absorption seldom successful. Pediculi were less common on account of the short hair. Pruritus was exceedingly common, and apparently some diseases appeared only in this form. Patients spoke of an "itching in the blood," and all that could be found was a dry, hard skin. Psoriasis occurred, and when the scales were removed there might be a bleeding surface. A white spot was left after a cure. Scabies was uncommon and less troublesome. Seborrhœa capitis was seen in fifty per cent. of the black women, due to their lack of cleanliness. In syphilis the chancre occurred sooner after the exposure, and there was more induration. The inguinal glands became much enlarged, and were prone to suppuration. The secondary eruption might easily be overlooked, as there was no redness. Itching was also likely to be present. The mucous membrane of the mouth and throat was generally diseased. The tertiary stage was more likely to follow.

Tinea was less troublesome, and the treatment satisfactory. Urticaria was common, and accompanied by some burning and itching. Dermatitis venenata was very uncommon. Sometimes the itching seemed to be the only evidence of poisoning in this way. It seemed to the author probable that the pigmentation of the skin was the primary factor which caused the difference

in the various diseases. Whether any difference in treatment was to be recommended must be left to future investigation to decide.

Dr. HEITZMAN did not think the term chloasma should be applied to a condition where there was a loss of the pigment of the skin. The fact that there was itching in the eruption of syphilis seemed to him remarkable, since it was so uncommon in the white.

Dr. BULKLEY had seen a number of cases of chloasma in negroes, and also some cases of vitiligo. He was especially interested in the itching eruptions in the race, and was sometimes compelled to put down the diagnosis of pruritus. He was rather surprised that there were two cases of chancre upon the upper lip.

Dr. S. SHERWELL, of Brooklyn, remarked the absence of any case of lupus in the five hundred cases. Generally there was about one per cent.

Dr. FOX noted that there had been no mention of the exanthemata. He had been asked to give an opinion in cases where scarlatina was suspected. In the first stages one had to depend on the fever and the examination of the throat. In the stage of desquamation he had been struck with a peculiar "peppered" appearance of the skin, the smooth luster having been lost.

Dr. FREDERICK had seen more cases of elephantiasis Arabum. He had had one case of double elephantiasis. He had seen many cases of syphilis, but did not remember any case of extra-genital syphilis.

Dr. A. R. ROBINSON, of New York, would criticise the drawing of such distinct conclusions from so small a number of cases. The character of the observations was of great interest, but we needed more of them.

The PRESIDENT had long felt that a chapter in the history of skin diseases was wanting, and hoped that statistics would be kept for a longer time. Though he had found acne uncommon in the negro, yet there was a very common condition of the face of young colored men who were heavily bearded and who shaved frequently, which seemed to be a peculiar follicular inflammation. Each pustule was penetrated by a hair, and on incision a drop of pus escaped. It was very persistent, and usually gave no trouble. He had seen the large masses of glands in the groin in syphilis, and had observed that they usually pointed in several places, the circumglandular tissues being involved more than the glands themselves. Chloasma he had found very common, especially in those of mixed blood. A pigmentation would often follow the application of a mustard plaster. He had been especially struck with the frequency and size of the keloid growths, particularly those occurring after scars; but he considered that these frequently became resolved of themselves. Pediculi capitis might not be common, but the body louse was frequently seen. Pruritus he generally attributed to some form of parasite. He could confirm the observation as to the itching in syphilis. The papillary syphiloderm was also very common with them, and it resembled the lesion of ring-worm at a certain stage, when it had an iris-like margin. Vitiligo was probably not more common than among the whites, but the contrast in color made it more prominent.

Dr. MORRISON asked if there was any good treatment for follicular inflammation of the bearded part of the face; and he would inquire why the president considered the pigment the element which made the difference in the character of the diseases; why might it not be in the lymphatic system, which was different, and would carry off the products of inflammation at a different rate?

The PRESIDENT had usually observed the follicular inflammation accidentally, and when he had been called upon to treat it he had not met with very good success. It usually caused no unpleasant symptoms.

Dr. MORRISON said that the diagnosis of chloasma had been made from the general symptoms rather than from the spot. It was not leucoderma, and he supposed it was what was called uterine chloasma. He had been taught that itching was not present in the eruption of syphilis, but in the negro it was not true. He would agree with Dr. Morrow that the number of cases was too small to more than point the way toward further study. As to the influence of the pigment, that was only a suggestion, and not a settled conviction.

The Relations of Papilloma to Syphilis and Tuberculosis of the Skin, with Report of a Case.—Dr. MORROW read a paper on this subject in which he said that the term papilloma was used in a general way to include a great variety of lesions, such as the warty formations developing as primary processes; the specific products of certain zymotic diseases; growths the sequel of pathological lesions, such as ulcers of the leg. We might have growths of scrofulous, syphilitic, or lupous origin, the verrucous papilloma or the carcinomatous papilloma, papilloma neuroticum, dermatitis papillomatosa capillitii, zymotic papilloma, verruca necrogenica, lupus papillaris, tuberculosis verrucosa cutis, eczema verrucosum, pompholyx vegetans, syphilis vegetans, etc. Papillary outgrowths, from the pathological side, were not specific products, but rather accidental results. It was probable that the papillary proliferations which followed a chronic inflammation of the corium were more or less closely allied to the giant granulations which developed in connection with the cicatrization of wounds or ulcers. They might be considered as a deviation from the normal process of granulation, in which the papillary hypertrophy had, under the influence of long-continued inflammation or from structural peculiarities of the skin, taken up an exaggerated development. Practically, it was often impossible to determine, from the aspects of the tumor, whether it was a primary or secondary process. The author reported the history of a case occurring in an Italian, thirty years of age, who had been first seen in February, 1888. Two years and a half before his left wrist had become inflamed, and the hand had been subsequently amputated. Otherwise he had been and was in good health. A large portion of the face was covered with crusts, under which were found papillary growths, everywhere uniform, suggesting the cauliflower. Pus escaped from fissures between the masses. The vegetations were found to rise directly from a sound skin. The papillomata were soft and fleshy, but soon dried, and were accompanied with much heat and pain. There was a chain of glands in the right side of the neck.

Syphilis had been ruled out by the lack of initial symptoms, the sluggish development, the absence of concomitant symptoms, the failure of treatment, and especially the absence of the hard brownish-red margins which were almost pathognomonic of the vegetating syphilide. Lupus verrucosa and tuberculosis verrucosa cutis had been suggested. The author here went into a discussion as to the identity of lupus and tuberculosis. To him a strong proof was the large number (seventy per cent.) who had tuberculosis elsewhere in the body. It seemed most likely that the disease was a tuberculosis. Some of the papillary growths had been removed and submitted to Dr. Elliot, and the bacilli of tuberculosis had been found. In accounting for the origin of the disease the author considered it likely that the previous disease of the wrist was a tuberculous osteitis, and that the bacilli were in some way transferred from that point.

Dr. FOX thought that framboesia occurred not only in the pustular form of syphilis, but in the ordinary tuberculous form of the disease. He believed that a true eczema might be ingrafted upon a syphilitic patch. But he did not remember having seen a disease modified by the existence of syphilis; this he

considered a fault in diagnosis. He called attention especially to what was termed eczematous frambœsia, which occurred on the surface of these syphilitic patches.

Dr. MORROW asked why they were called eczematous.

Dr. FOX replied that they had the characters of acute eczema, and were limited to the syphilitic patches.

Dr. MORROW asked whether Dr. FOX would regard the papillary outgrowths which occurred in the other forms of chronic inflammations of the skin, such as lupous and scrofulous ulcers, as also eczematous.

Dr. FOX made no such statement. He simply spoke of the eczematous outgrowths as one form of the papilloma.

Dr. BRONSON had had the care of the patient for a time, and was much interested in the case. He had at first supposed the disease to be syphilitic, and had treated it accordingly. Under the application of a solution of corrosive sublimate there had been improvement for a time. He considered the diagnosis of tuberculosis as good as any that could now be arrived at. It was surprising that after so long a time there were no signs of tuberculosis elsewhere.

Dr. SHERWELL would take issue with Dr. FOX in regard to the influence of syphilis upon other diseases, such as eczema. He considered that such an influence was sometimes seen.

Dr. HEITZMAN called attention to the progress that had been made in the study of these affections in the last forty years. He regarded this case as settled from the moment the tubercle bacillus was discovered.

Dr. MORROW asked an expression of opinion as to the identity of lupus and tuberculosis.

The PRESIDENT reminded Dr. MORROW of the paper by Dr. Morrison.

Dr. MORROW had understood that Dr. Morrison had changed his views since the publication of that paper.

Dr. HEITZMAN was convinced that lupus and tuberculosis were identical, and said that the vast majority of dermatologists subscribed to the same view. Kaposi did not agree.

Dr. BULKLEY considered the presence of the tubercle bacilli as proof of the identity of the diseases.

Dr. FOX spoke of the allegation that had been made that there was a difference between ordinary tuberculosis and lupus vulgaris.

Dr. SHERWELL, from clinical data, thought there might still be room for doubt. In his experience there were many cases in which there was no evidence of tuberculosis elsewhere.

Dr. ROBINSON did not think the question solved with any positiveness. It was true that bacilli had almost always been found, but they had generally been very few in number. Cultivations had been made, and tuberculosis had been produced, but the objection had been that no one had yet produced lupus vulgaris by the inoculation of the tubercle bacillus.

Dermatitis Herpetiformis.—Dr. J. E. GRAHAM, of Toronto, Canada, read a report of three cases. The first two had been in men with a history of two and five years' standing. In each there had been many recurrent attacks, with extension from the face over the whole surface of the body. There had been erythematous patches, papules, vesicles, and brown discolorations. The second patient had been first attacked while overheated. The third case had appeared in a strong, healthy woman, twenty-three years old, who had had one miscarriage. On several occasions in early life she had had eruptions on the face of a vesicular and bullous character. Just after the birth of the second child, which had been a healthy infant, bullæ had appeared at the corner of each eye. Then they had formed on the face, and the disease had gradually extended over the body. She had failed gradually, and died after many months of ineffectual treatment. There had been no autopsy.

After the rupture of a bulla there might be: (a) Scab formation, with healing and brown discoloration; (b) a new bleb formed on the site of the old one, which usually would contain pus; at the same time vesicles formed round the edges, producing extension; (c) a raw surface left; (d) extension taking place by simple lessening of the epidermis without any formation of serum beneath. The distinction from pemphigus was made by the herpetiform arrangement of the lesions and by the peculiar method of extension.

Dermatitis Herpetiformis, with Notes of Three Cases.

—Dr. H. W. STELWAGON, of Philadelphia, then read a paper on this subject in which he said that the first case at one time had resembled pemphigus; at another, herpes iris; and at still another, erythema multiforme. Many attacks had occurred, and the patient could tell of their approach by a peculiar itching of the skin. In the second case the conjunctiva and the mucous membrane of the mouth and trachea had been affected. After he had been nearly well of one attack, another had come on immediately after a bath. Arsenic had been given in each case with good results. In the third case, that of a female, there had been a tendency to umbilication, but not to rupture. It had been treated by a saturated solution of boric acid locally.

Dr. F. E. HYDE, of Chicago, thought we had come to the point where we must separate impetigo herpetiformis and some of the exfoliative disorders from the group of cases that had been so admirably described by Duhring. He would not necessarily associate Dr. Graham's third case with this group simply on the ground of repeated attacks. The previous outbreaks, he thought, might have been of a different character. The speaker reported at length a case occurring in a man, with symptoms and eruptions precisely like those of the third case of Dr. Graham's, where eventually the whole area of the body had been affected, and there had been very extensive separation of the skin. The continuous water-bath of Hebra had been used, but death had occurred after three months. It had only differed from the case of Dr. Graham's in the absence of previous attacks.

Dr. BULKLEY referred to the address of the president in relation to the need of greater knowledge of the ætiology of these affections, and the similarity of lesions which might result from widely diverse causes. He had shown at the New York Dermatological Society a typical case of this disease, in which the patient had afterward died, and internal sarcoma had been found at the autopsy. Dr. Stelwagon's third case seemed a typical one, and he had learned of the patient's death a month ago of some brain trouble. While she was under his care she had been taken with acute congestion of the brain, but became better. He thought the dermatitis was an illustration of the acute brain lesion. He would class the third case of Dr. Graham's with pompholyx, and would widen the definition of the latter affection to include the earlier and varied forms which resembled the disease which Duhring had described.

Dr. FOX had treated one of the cases reported, and it had shaken his belief in the identity of the various diseases. It illustrated how from time to time a disease might pass through different phases of development and appear as different diseases to different men. He had seen the case between the outbreaks of vesicles, and there had been a diffuse erythema. In this case arsenic had not had a good effect. He had seen one very severe case of bullous eruption get well with no internal medication, and if arsenic had been exhibited the result would have been attributed to it.

Dr. HEITZMAN had been slow in accepting the classification of Duhring, but, so far as his own experience went, he would agree with him. He had seen but one case which he was sure

belonged to the class. He would not include the impetigo herpetiformis of Hebra.

Dr. SHERWELL had found diabetes in two cases of the disease. The patients had been relieved by diet. But there were others who had no such trouble.

Dr. GRAHAM had examined the urine in all the cases, and neither sugar nor albumin had been found. He believed that the third case had arisen from a different cause from that of the others, but we had not yet reached a point to distinguish them.

Dr. STELWAGON believed it best to put these various affections under one head, for we at present had no place to put them. His doubtful case might have been classed as hydroa, but that was a still more ambiguous term. He did not believe that diseases should be separated because they had different ætiological factors. Acne was acne, though it might be produced in different ways. It would lead to useless multiplication of terms, but we must keep in mind that it might be produced in these different ways.

The PRESIDENT recognized the fact that there was a strong pathological chain binding together this series of cases, but we classified disease according to pathological or clinical expressions simply because data were lacking for an ætiological classification.

Dr. ROBINSON thought that there were great limitations to a classification from an ætiological standpoint; it could never be complete, and therefore not desirable.

Note of a Case of *Filaria Medinensis*.—Dr. VAN HARLINGEN read a paper with this title. The patient worked in the Custom-house, and opened invoices from different countries. Last September he had noticed a small red papule under the skin on the back of the hand, accompanied with itching, but not with pain. This had pushed along under the skin, and had shown a sinuous red coil. It had crossed round into the palm. It was cut down upon, but was not found, and asafetida was administered in three-grain pills, three four times a day. At the end of four days there was but a trace of the line. He had remained entirely well. But two other cases had been reported in this country in persons who had not been in tropical lands. The method of propagation was not known. The author said that generally too much stress was laid on the furuncle at the site of the parasite. In the countries where it abounded they cut down on it and drew the filaria out. Care must be taken not to rupture the mature worm, as it was a female filled with young. Electricity had been used, and injections of carbolic acid. Iodide of potassium had been given internally.

Note relative to the Condylomaform Lesions induced by Ingestion of some of the Iodine Compounds.—Dr. HYDE read a paper with this title. The patient, a girl of eighteen, who had never menstruated, had injured her right elbow joint when fourteen years old. Ankylosis had followed, and she had entered the hospital for the removal of a spicule of necrosed bone that was protruding. There had been no history of syphilis. She had been given one grain of iodine and one grain of the iodide of potassium. Within three days she had "caught cold," but the use of the drug had been continued. Very soon tubercles had appeared on the face, and extended well over the forehead and down to the neck. It had looked something like a case of mycosis fungoidea, the growths being covered with a yellowish discharge. The patient all the time had remained in the best of general health, and it had been decided to try the effect of omitting all medicines. The effect had been surprising, for all trace of the lesions had rapidly disappeared. As a matter of proof, the iodide had been given again for a few days, and the lesions had promptly returned.

In a second case there had been almost a confluent eruption of the face and forearms. There had been roundish or oval

flattened tubercles, tending to become umbilicated. There had been a peculiar dark color, like that in "black measles." The patient was well three weeks after the discontinuance of the medicine. The following conclusions were arrived at:

1. When iodine compounds, irrespective of the size of the dose, had been administered to well-nourished infants, children, and persons whose skins were in a condition usually found at these ages, a quasi-bullous rash might occasionally appear, whose elements differed from the blebs which sometimes formed when the drug had been administered to older persons, syphilitic, cachectic, or in grave conditions of prostration.

2. The interest attaching to the recognition of the value of the eruption was partly due to the fact that in the class named it might be superimposed upon an eczematous or seborrhœic condition for which the iodine had been administered.

3. The regions involved were almost exclusively the scalp, face, neck, upper chest, forearm, and hand.

4. The subjective symptoms were comparatively insignificant. The disproportion between the severity of the lesions and the condition of the patient was of high diagnostic value.

5. Involution commonly progressed rapidly after the discontinuance of the drug, and rarely there were left small atrophic patches.

Dr. HEITZMAN said that he thought it wiser to omit the term "vegetative" in the title. He had seen a case where a general eruption of blebs over the body had been at once relieved on the discontinuance of an iodide which the patient had been taking. He had seen tubercles similar to those described by the reader following the use of bromide of potassium. He would explain the action by the attempt of the drugs to leave the skin by way of the glands.

Dr. MORRISON had seen somewhat similar eruptions follow the ingestion of small doses of the permanganate of potassium.

Dr. MORROW had seen similar cases, and had reported last year a case in which there had been vegetative lesions following a bullous eruption, and which had been so severe that several medical gentlemen would not believe it was caused by the drug. But they had quickly disappeared when the drug was omitted. The peculiar localization of the eruption was of interest to him, and he was not ready to accept the view that the cause was the elimination of the drug by the glands, for the drug had not been found in the lesions, even when it had been given in very large doses.

Dr. STELWAGON reported a case that he had recently seen, where the lesions had been small vesicles, soon becoming pustules, and then spreading in size. The patient had improved under simple treatment, but afterward had died of cardiac disease.

The PRESIDENT reported a case where there had been a follicular eruption. Ulceration had taken place, but on withdrawing the iodide the recovery had been rapid. He considered the eruption to be of nervous origin.

Molluscum Contagiosum; a Preliminary Report.—Dr. STELWAGON read a paper on this subject in which he stated that English writers said the disease was contagious, while the Germans, French, and Americans took the opposite view. The author had seen thirty-two cases in four groups, containing respectively four, thirteen, three, and twelve cases. All the cases in each group had appeared in the same institution or the same family. Various attempts at inoculation had been made, but without success; at least no characteristic lesions had been produced. He concluded:

1. The disease generally was seen upon exposed parts, or parts that came in contact with the hands, such as the genitals.

2. It occurred generally in children, and among the poorer classes.

3. It was very common to find the affection in groups or series.

4. In admitting its contagious nature, it must be admitted that it possessed this quality to an extremely slight degree.

Dr. HYDE had been much interested in the history of some twin sisters who had come to his clinic. On the first day one had some lesions of molluscum, which, under treatment with the monochloride of mercury, had disappeared at the second visit. But at this time the second sister had become affected just as the first one had been before. There had been such an absence of symptoms that he inoculated himself on the arm from a typical lesion on the face of the twin. On the third day there had been a vesicle-pustule. On the fourth day it had formed a crust, and with that he had inoculated two medical students, and there had been abortive lesions formed.

Dr. STELWAGON wished to state that only two or three inoculations out of a series of a dozen or more had taken. The effects had been similar to those caused by inoculation from impetigo contagiosa pustules.

Dr. HYDE had been struck with the relative rarity of the cases.

Dr. MORROW, from his experience, had supposed that the growths came from direct inoculation. He thought there was a certain relation between molluscum contagiosum and warts, as Dr. Fox had intimated some years before. He had seen a boy almost covered with typical lesions of the kind under discussion, in whom they had all disappeared in the course of a few months, though only a few of them were treated.

Dr. SHERWELL had been impressed with the rarity of the disease during the last few years. He had seen one series of cases in an institution where the indications had been that it was contagious. Before seeing these cases he had not believed in the contagiousness of it, but had been led to change his opinion at that time.

Dr. ROBINSON believed in the contagious character of the disease, though it was entirely upon theoretical grounds and the evidence of others.

Dr. Fox some time before had made repeated inoculations on himself and others, but all the results had been negative. The only successful inoculation that he knew of was the one related by Retzius. The disease generally occurred in those who were in poor surroundings or in poor health, but had been seen in those who were in robust health. He had no doubt that the ordinary dry warts that were seen on children's hands were contagious.

Dr. MORRISON was of the opinion that it was a parasitic disease which might be carried from one to another.

Dr. HEITZMAN called attention to an article by Neisser in the last number of the "Vierteljahresschrift für Dermatologie," in which it was positively maintained that there were peculiar corpuscles which were the parasite.

Dr. C. W. ALLEN, of New York, on invitation of the president, said that he had seen in the Baretta Museum of the St. Louis Hospital in Paris, the past summer, a wax model of a typical lesion in the arm of a child which had been produced by inoculation, and this to his mind would be positive proof of the contagiousness of the growth. The inoculation had been done under Fournier's direction.

Dr. STELWAGON, in his cases, had never seen any connection between the warts and the tumors. The inoculations had been made in the children who had the disease.

The Non-identity of Lichen Planus and Lichen Ruber.

—Dr. G. H. Fox read a paper on this subject. He reported five cases of true lichen ruber that he had seen, which he considered a large number, considering the rarity of the disease.

CASE I.—A woman of thirty-five. The disease began in childhood, and was characterized by papular lesions, accompanied with slight itching. The nails were notably affected. She died three years after she was shown.

CASE II was at first considered one of a peculiar form of ichthyosis. When first seen it affected the elbows, hands, and feet. This case afterward took on the characteristic appearances, and went on to a fatal termination.

CASE III was in a German saloon-keeper who had been affected for fifteen years. He had exacerbations about twice a year.

CASE IV was in a patient now fourteen years old. It came on a few months after birth, and occurred on the limbs and about the ankles, mostly on the extensor surfaces. The scalp was dry and powdery, but the hair was not affected. Under treatment with oil the skin became softer, but water made it worse.

CASE V.—A man of thirty-two. The lesions here were bead-like in appearance.

From his study of these cases, the author would believe in the essential difference of the two affections.

The Question of Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson).—Dr. ROBINSON read a paper on this subject. He compared at length the clinical symptoms, histology, prognosis, and results of treatment of the two affections, and showed that in none of their attributes did they appear alike. He reached the following conclusions:

1. Lichen planus and lichen ruber, in doubtful cases especially, were to be diagnosticated not by the form of the lesion alone, but also by all the symptoms and the course of the eruption.

2. Lesions resembling those of lichen ruber and lichen planus existed in other diseases.

3. In the lesions described by Unna his division was an incorrect one.

4. The same was true of Boeck's cases.

5. No cases had been reported that showed absolutely, or even with probability, that lichen planus and lichen ruber were but two forms of the same disease.

6. If an identity of ætiology existed, such cases would long ago have been reported, as lichen planus was a rather frequent disease.

7. Finally, in the absence of proof by the transformation of the lesion, or difference in symptoms, course, prognosis, histology, and effects of drugs, in the two forms of the eruption, we found no grounds for considering lichen planus and lichen ruber identical diseases.

Lichen Ruber as observed in America, and its Differentiation from Lichen Planus.—Dr. R. W. TAYLOR, of New York, read a paper on this subject. (It will be published hereafter.)

Dr. SHERWELL considered it the most important subject that had been brought before the society for a long time. There seemed to be a very general consensus of opinion among American dermatologists as to the difference of the forms. He had seen three cases which had been identical with the form described by Hebra, showing that that form did occur here, and it was certainly different from our common lichen planus. Within a month he had had two cases of lichen planus in persons who were otherwise entirely healthy. He believed he had seen about 2 per cent. of lichen on going over his whole dermatological life. Basing his opinion entirely on clinical studies, he was sure of the non-identity of the diseases.

Dr. BRONSON agreed that the pathological anatomy of the lesions was different, and yet, if it had been similar, that would be a trifling argument in the face of the mass of clinical evidence.

Dr. BULKLEY thought there were cases of lichen simplex that Unna had mixed up with lichen ruber. We saw these cases again and again. He was particularly impressed with the statement that in lichen planus sometimes patches would form and not progress for a long time. He had known such a patch on the back to persist for months and then extend.

The PRESIDENT thoroughly agreed with the preceding speakers.

Dr. HEITZMAN thought the trouble had arisen from the fact that all the cases of these affections had formerly been called chronic eczema.

Dr. ROBINSON did not think that the histological examination was of importance, though it showed the difference in the two diseases. He would base his diagnosis upon the sum of all the facts entering into the case. There had been shown no tendency for one disease to become changed into the other. The different behavior under treatment was also an important element.

Dr. TAYLOR, in summing up the case, could only reiterate his statement as to his hearty belief in the difference between the diseases.

Kraurosis of the Vulva (Breisky).—Dr. HEITZMAN read a paper on this subject. He had been shown the case by Dr. Mundé. It was in a woman of thirty-five, who complained of fearful itching in the vulva. It was found that Breisky, of Vienna, had seen nine cases and had not been able to cure any of them. Dr. Weir had described a similar case some years before. There was in these cases a profuse mucopurulent erythritus, with whitish, thickened patches scattered over the mucous membrane. The patch might be a good deal raised, and felt like parchment. The important subjective symptom was the intense itching. Mental affections sometimes followed. The author considered it nothing more than a chronic eczema of the vulva, and found that the cases were curable, though somewhat slowly at times. It might be mistaken for psoriasis, but that would not be confined to the mucous membrane so long. There was in two cases a uric-acid diathesis, and in one oxaluria. The erythritus seemed to be secondary, for it ceased when the local trouble was relieved. The treatment consisted in curetting the lesions, and if they could not be easily reached in this way, nitric acid might be applied. A solution of cocaine might be used to dull the pain. Salicylic acid would remove the thickened epidermis. In the case reported by Dr. Weir the final result had been the formation of cancer.

Dr. BRONSON was not sure that he had ever seen such a case as the author had described. He asked whether the growths were papillomatous in character.

Dr. HEITZMAN replied that they were flat.

Dr. BRONSON had seen in a man a papillary growth that reminded him of the cases reported by Dr. Heitzmann. They were exceedingly persistent.

Dr. SHERWELL referred to an article he had lately seen in the "Gazette des hôpitaux," where five cases of apparently a similar character were reported, though only one was in the vulva, the rest being in the oral cavity. The author preferred the name leucoplasia, rather than kraurosis. The patients were curetted, and relief was afforded. If left alone the parts took on an epitheliomatous formation. In one case this had happened after forty years.

Dr. GRAHAM asked if the itching had preceded the local lesion.

Dr. HEITZMAN replied that it had not. To his knowledge the disease had not returned.

Dr. HYDE asked if Breisky did not refer to an atrophic condition of the labia minora—a condition which he remembered to have seen in one of his cases.

Dr. HEITZMAN replied in the affirmative.

Dr. HYDE's case had been in a widow of forty, and there had been present the intense itching, and also the marked atrophy.

Dr. HEITZMAN was surprised that so few cases had been met with. The condition had nothing in common with leucoplakia of the tongue. The ætiology was utterly in the dark. It was surprising how the women who were affected with this affection were pulled down by it.

Dermatitis Tuberosa—the so-called Iodic Form.—Dr. TAYLOR read a paper on this subject. (See page 477.)

Dr. HEITZMAN would ask the author if he had formed any idea as to how the iodine preparations caused such troubles.

Dr. TAYLOR thought that the trouble was angeio-neurotic; the action was carried back to the nervous system, and by that to the blood-vessels. He did not think there was any action on the glands at all.

Dr. ROBINSON would object to the use of the term dermatitis, as it was applied to so many conditions, and meant so little.

Dr. HYDE agreed with Dr. Taylor in regard to the ætiology of the affection. He called attention to the fact that iodic purpura always occurred in the lower extremities.

Dr. MORROW had seen some cases of iodic purpura on the upper extremities. These patients generally had syphilis. He agreed that it was within the sphere of the nervous system that we must look for the explanation of the cause of the eruption.

The PRESIDENT believed that the action started in the follicles, although the absence of the iodine at the tests would tend to prove that it was not done by irritation during elimination.

Dr. TAYLOR upheld the use of the term dermatitis whenever there was an inflammation of the skin, as giving an exact idea of what was taking place.

Dermatitis Plantaris and Palmaris.—Dr. BULKLEY read a paper on this subject. He had applied the terms advisedly to signify an affection which consisted of a general exfoliation of the hands and feet, especially of the palmar and plantar surfaces, which was recurrent in its nature. He gave in some detail the history of three cases. In the first it had occurred many times, and the man could predict when an attack was about to occur by a peculiar burning and itching of the parts. Each attack had lasted about a week, the nails being always attacked. Sometimes a slight rash had appeared over the abdomen, but this had been the only lesion outside the extremities. The second case was much like the first, though less severe; and the third, which was in a woman, was really but one attack, which lasted for several months and then resolved very slowly. It was necessary to distinguish the first case from dermatitis exfoliativa, which could easily be done by the limited area of the invasion and the clinical history. It was probable that the cause of the disease must be sought in the nervous system. Treatment was both internal and external, the former directed to the nervous element. The first patient had been helped by the long-continued use of arsenic. Emollients had aided in the recovery. In one of the cases a lotion of borax and glycerin in rose-water had kept the skin soft and prevented scaling.

Dr. HEITZMAN asked if perspiration had been a marked feature, and was assured that it had not. He had seen a case of the exfoliation where there had been excessive perspiration at the same time. At the time he had recorded in his case-book the diagnosis "Dermatitis exfoliativa plantaris or palmaris." He was surprised that Dr. Robinson did not like the term dermatitis. He did not know what term could be used in its place.

Dr. ROBINSON would prefer the name herpes zoster to the name "vesicular dermatitis"; in the same way he would prefer a better name for these affections.

Dr. HYDE had seen a case where there had been a complete

glove of skin peeled off. The recurrence of these symptoms was a significant feature.

Dr. GRAHAM did not believe in multiplying terms, and would use dermatitis.

Book Notices

A Manual of the Minor Gynecological Operations. By J. HALLIDAY CROOM, M. D., F. R. C. P. E., F. R. C. S. E., etc. First American from the Second Edinburgh Edition. Revised and enlarged. By LEWIS S. McMURTY, A. M., M. D., etc. With numerous Illustrations. Philadelphia: Records, McMullin, & Co., 1888. Pp. 228.

THE American editor of this little book is actuated by the commendable purpose of supplying a real need of practitioners in this country, but it must be confessed that, in view of the present status of post-graduate instruction in gynecology, he has hardly attained his object by putting forward Dr. Croom's elementary work. Without boasting, it may be said that we have outgrown it. Granting that "this little manual has a mission peculiarly its own," it must be confessed that it is more suitable for the student than for the practitioner. But we must not condemn it unheard.

The work is divided into two parts, the first, including seventy-three pages, being devoted to diagnosis, and the second to therapeutics. It is certainly a serious blemish in such a condensed manual that one third of it should be devoted to anatomy and gynecological examination, subjects which are exhausted in every treatise on diseases of women, and with which the student is supposed to be familiar before he aspires to become an operator. This criticism was urged against Doran's "Gynecological Operations," a more elaborate and otherwise excellent book. The suspicion is hardly avoidable that much of the material in the first eight chapters must be regarded as "padding," although it is very good in itself. Part II consists of five chapters, the first treating of operations on the vulva, the second of those on the vagina, the third on those of the urinary tract, and the fourth and fifth of those on the cervix and body of the uterus, respectively. Chapter I would be extremely meager without the American editor's description of posterior colporrhaphy, which is copied from Emmet. Chapter II is supposed to treat of operations on the vagina, under which are included vaginal injections, the use of the tampon, and pessaries (!). This singular limitation of the word "operations" apparently receives the full approval of the editor. The surgery of the urethra and bladder is described in a fairly satisfactory manner. Chapter IV is entitled "Cervical Applications," an evident error in proof-reading, since it includes operations on the cervix. The description of such an important operation as trachelorrhaphy takes up a little over a page. We are recommended to remove the sutures on the seventh day, a procedure generally calculated to insure failure. Chapter V is on "Intra-uterine Applications," by which the author understands such slight manipulations as enucleation of an interstitial fibroid, a somewhat difficult operation for the beginner, and reduction of the inverted uterus. The American editor adds a chapter on laparotomy, with the unnecessary and rather confusing apology that a few years since abdominal section could not be regarded as a minor gynecological operation, "and even now it must be conceded to be a serious operative procedure." For the benefit of the public it should be stated that the Kibbee cot has been banished to the garret with the spinning-wheel.

We must give the editor the credit of making the best out

of imperfect material. His additions are, with a few exceptions, the only portions which are of interest to the American reader. Aside from these, we can hardly discover the *raison d'être* of the book.

Hygiene of the Nursery. By LOUIS STARR, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, etc. With Twenty-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii-17 to 212. [Price, \$1.50.]

THIS small, well-written book contains a series of hygienic rules which, if applied, can not fail to reduce the death-rate. Dr. Starr first gives an account of the features of health and their variations in disease. Minute instructions follow as to how health may be preserved and the highest physical development secured. Great stress is laid upon the choice of nurseries—one for occupation by night, the other by day. "Any room in the house will not do for a day nursery. Rather, on the contrary, must the best room be selected. It should have a southwest exposure, and be, if possible, so situated in the building as to allow of at least two broad windows—one in the southern end and one in the western side." Neither day nor night nursery should communicate with a bath-room having sewer connections.

Dr. Starr forcibly urges the necessity of cleanliness in every form, the removal from the nursery of dust and of food not required for immediate use, the disinfection of waste-pipes, ventilation, and frequent, regular bathing and changes of linen.

Babies' clothes should be warm and loose in order to maintain an equal temperature all over the body, and at the same time allow of freedom of action. While waging war against the absurd fashion of "bare knees," Dr. Starr might have satirized "Kate Greenaway" dresses for children. If the former mode is too short, the latter is too long.

Although Dr. Starr recommends close proximity between nurseries and parents' sleeping apartments, he evidently thinks it expedient to place the nurse in full charge day and night. We feel inclined to dispute the point. Ideal nurse-maids, such as are portrayed in Chapter III, are, unfortunately, not plentiful. Far from lightly alluding to the counter-claims of domestic and social duties, Dr. Starr should have made it clear not only that mothers are legally the guardians of the physical and moral welfare of their children, but that they ought to be so in fact.

The general rules for the nutrition of infants from birth until the tenth month, based upon Rotch's paper on the capacity of the stomach, tend to correct the ruinous and wide-spread error of constant feeding.

We hope that the author, encouraged by the favorable reception of his book, will decide to write another with special reference to the conditions of tenement-house life.

BOOKS AND PAMPHLETS RECEIVED.

How far can Legislation Aid in Maintaining a Proper Standard of Medical Education? (A Paper read before the American Social Science Association at the Annual Meeting, held at Saratoga, September 5, 1888.) By W. A. Purrington, Counsel of the Medical Society of the County of New York.

Hot Water in the Management of Eye Diseases. Some Suggestions. By Leartus Connor, A. M., M. D., etc. (Read before the Ophthalmological Section of the Ninth International Medical Congress.)

Puerperal Fever a Preventable Disease. A Plea for the more General Adoption of Antiseptics in Midwifery Practice. An Address introductory to the Session of 1888-'89, delivered at St. Thomas's Hospital, October 1, 1888. By Charles J. Cullingworth, M. D., F. R. C. P., etc. London: J. & A. Churchill, 1888.

The Palatal Rugæ in Man. By Harrison Allen, M. D. [From the "Proceedings of the Academy of Natural Sciences."]

Ueber Natur und Behandlung des Furunkels besonders im "äusseren Ohre," von Dr. B. Loewenberg, in Paris. [Separatabdruck aus der "Deutschen medicinischen Wochenschrift."]

List of Pharmacists and Assistant Pharmacists registered by the Board of Pharmacy of the City of New York, 1872-1888.

The Preferable Climate for Phthisis; or, the Comparative Importance of Different Climatic Attributes in the Arrest of Chronic Pulmonary Diseases. By Charles Denison, A. M., M. D., etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

New Series of Metric Test-letters and Words for determining the Amount and Range of Accommodation. By Charles A. Oliver, M. D., of Philadelphia. [Reprinted from the "Transactions of the American Ophthalmological Society."]

A Treatise on Headache and Neuralgia, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep. By J. Leonard Corning, M. A., M. D., Consultant in Nervous Diseases to St. Francis Hospital, etc. Illustrated. New York: E. B. Treat, 1888. Pp. 10-15 to 231. [Price, \$2.75.]

The Diagnostic Significance of the Mitral Presystolic Murmur. By Frank Donaldson, M. D., etc. [Reprinted from the "Medical News."]

Prolapse of the Inverted Lower Portion of the Right Ureter through the Urethra in a Child Two Weeks Old. By Augustus Caillé, M. D., etc. [Reprinted from the "American Journal of the Medical Sciences."]

Sterilized Milk. A Report of Some Experiments made to Determine the Proper Manner of Boiling and Preserving Milk for the Use of Infants. By Augustus Caillé, M. D., etc.

The Failure of Dr. J. B. Thomas's Treatment of Urethral Stricture by Electrolysis. By Robert Newman, M. D., of New York. [Reprinted from the "Journal of the American Medical Association."]

A Method of Prophylaxis in Diphtheria. By Augustus Caillé, M. D. [Reprinted from the "Medical Record."]

Tests for Diabetes Mellitus. By Palmer C. Cole, A. M., M. D. New York. [Read before the Northwestern Medical and Surgical Society of New York.]

The Western Pennsylvania Medical College, Pittsburgh. Sessions of 1888-1889.

The Sheltering Arms. Twenty-fourth Annual Report. New York. 1888.

Miscellany.

The Registration of Births, Marriages, and Deaths in New York.—The Board of Health has issued the following circular:

"At a meeting of the Board of Health of the Health Department of the City of New York, held on the 18th day of October, 1888, at said office, the following resolution was adopted:

"Resolved, That the attention of 'clergymen, magistrates, and other persons who perform the marriage ceremony in the city of New York,' and also of physicians and midwives who attend on births in the city of New York, is respectfully called to the following sections of the laws relating to the Health Department of the City of New York:

"*New York City Consolidation Act of 1882.*—SECTION 602. It shall be the duty of the clergymen, magistrates, and other persons who perform the marriage ceremony in the city of New York, to keep a registry of the marriages celebrated by them, which shall contain, as near as the same can be ascertained, the name and surname of the parties married; the residence, age, and condition of each; whether single or widowed.

"SEC. 603. It shall be the duty of the parents of any child born in said city (and if there be no parent alive that has made such report, then of the next of kin of such child born), and of every person present at such birth, within five days after such birth, to report to said board in writing, so far as known, the date, ward, and street number of said birth, and the sex and color of such child born, and the names of the parents. It shall also be the duty of physicians and professional midwives to keep a registry of the several births in which they have as-

sisted professionally, which shall contain, as near as the same can be ascertained, the time of such birth, name, sex, and color of the child, the names and residence of the parents, and to report the same, on or before the first Monday of each and every month, to the Board of Health.

"SEC. 605. For every omission of any person to make and keep the registry of marriages and births required by the preceding sections, and for every omission to report a written copy of the same to said board within ten days after any birth or marriage provided to be registered; and for every omission by any person to make the report of any death or birth, with the particulars as herein required, any person guilty of such omission shall be liable to pay a fine of ten dollars, which may be sued for and recovered in the name of such department for the benefit of said department. But no person shall be liable for such fine for not making the report herein required, if he or she shall prove that such report has been made to the board by some other person before suit brought for such penalty, or that he or she was ignorant of such birth or death.

"The frequent failures of the aforesaid persons to properly report marriages and births, due to ignorance of the law or to thoughtlessness, invalidates the value of such returns for statistical purposes, and not infrequently is of injury to those who are directly interested in such births and marriages. The Sanitary Code, in sections 160, 161, and 162, prescribes the same duty, and regulates the manner and time of such reports to be made to the Sanitary Bureau of the Health Department. Violations of the Sanitary Code may be punished as misdemeanors, and in civil suits for a penalty of fifty dollars. The Commissioners of the Health Department desire to impress on all persons who are responsible for such neglect, that the public good demands a faithful and prompt compliance with the requirements of these sections, and that a failure to properly comply with these legal requirements will subject the offender to the penalty of the law."

Government Health Reports.—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending November 23d:

(Published in accordance with Section 4, act approved April 29, 1878.)

England and Wales.—The deaths registered in twenty-eight great towns of England and Wales during the week ending November 3d corresponded to an annual rate of 19.6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 11.5, and the highest in Newcastle-upon-Tyne, viz., 29.9 in a thousand. Diphtheria caused 2 deaths in Manchester, 2 in Birmingham, 3 in Salford, and 4 in Newcastle-upon-Tyne.

London.—One thousand six hundred and thirteen deaths were registered during the week, including measles, 88; scarlet fever, 24; diphtheria, 39; whooping-cough, 19; enteric fever, 22; diarrhœa and dysentery, 34; and small-pox, 1. The deaths from all causes corresponded to an annual rate of 19.7 in a thousand. In greater London 2,025 deaths were registered, corresponding to an annual rate of 19.1 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 10; measles, 11; diphtheria, 10.

Ireland.—The average annual death-rate represented by the deaths registered during the week ending November 3d in the sixteen principal town districts of Ireland was 21.2 in a thousand of the population. The lowest rate was recorded in Wexford, viz., 4.3, and the highest in Armagh, viz., 46.5 in a thousand. In Dublin 165 deaths were registered, including measles, 2; scarlet fever, 1; diarrhœa, 1; whooping-cough, 6; enteric fever, 8; typhus, 2; diphtheria, 1.

Marseilles.—Eight hundred and ten deaths were registered during the month of October, 1888, including small-pox, 6; enteric fever, 27; scarlet fever, 1; diphtheria croup, 36; measles, 3; whooping-cough, 12; and diarrhœa enteritis, 61. The consul, under date of November 2d, reported that "the health of the city is good, there being a notable absence of epidemic diseases of all kinds."

Montevideo.—Four hundred and twenty deaths were registered during the month of August, 1888, including small-pox, 33; enteric and typhus fever, 6; diphtheria, 37.

Cardenas.—The United States consul, in his report for the week ending November 16, 1888, states: "Warm weather and dry. No more fever cases in town. Harbor, good health."

Nassau, N. P.—November 10, 1888: City very healthy. Strict quarantine against Cuba and Florida.

Georgetown, Demerara.—The United States consul, under date of October 27, 1888, states that "the three cases of yellow fever reported convalescent at the close of the previous week are believed to have entirely recovered. I have the authority of the surgeon-general of the colony for the statement that there is no infectious disease prevailing, nor any suspicion of such."

Ruatan.—The United States consul, in his dispatch dated November 1, 1888, states that "an epidemic similar to that experienced in this island last year broke out in Truxillo during the month of August last and continued, with fatal effects, until the beginning of the rainy season, about two weeks since. I inclose a list of the citizens of the United States who have fallen victims to this terrible malady, which, in all fatal cases, has presented at least one notable characteristic of yellow fever—viz., black vomit. Some physicians call it 'hæmorrhagic pernicious fever,' while others confess that it is the veritable 'Yellow Jack.' Some of the Americans whose names appear in the list were men of capital, and representatives of American companies operating in this country.

"Mr. Ord was manager of the 'Aguan Company,' of New York, who have a bank in Truxillo. Mr. Rector and Mr. Milligan were owners and representatives of large mining interests in the interior. The last-named gentlemen were accompanied by their wives, who fortunately escaped, and I had the satisfaction of assisting them to a passage to the United States."

Havana.—Eleven deaths from yellow fever are reported for the week ending November 9, 1888.

San Juan, P. R.—Two cases of yellow fever are reported for the week ending November 3, 1888.

Sarnia, Ontario.—Dr. W. Lehmann, provincial health inspector, in a communication to the chairman of the Board of Health, dated November 15, 1888, writes as follows:

DEAR SIR: At the request of the secretary of the provincial Board of Health I have visited your hospitals and quarantines. In conjunction with Dr. Oliver, your medical health officer, I have made a thorough examination: I find nine cases of small-pox—five in the hospitals and four of one family in an isolated house. I find the patients doing well, their medical attendance and comforts satisfactory. Quarantine and disinfection are strictly enforced, and I believe that your present efforts, with compulsory vaccination, which I strongly recommend, will soon free your town of the disease.

I have the honor to be, sir, yours, etc.,
W. LEHMANN, M. D.,
Provincial Medical Health Inspector.

MR. GEORGE LEYS,
Chairman of Board of Health, Sarnia.

MORTALITY TABLE, FOREIGN CITIES.

CITIES.	Week ending—	Estimated population.	Total deaths from all causes.	DEATHS FROM—							
				Cholera.	Yellow fever.	Small-pox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.
Paris	Nov. 3.	2,260,945	946			3		18	2	31	17
Glasgow	Nov. 3.	545,678	200						1	1	
Warsaw	Oct. 27.	414,814	258			4			21	13	
Copenhagen	Oct. 23.	300,000	126					1	2	2	
Copenhagen	Oct. 30.	300,000	135					4	2	4	
Palermo	Nov. 3.	250,000	70								
Belfast	Nov. 3.	227,022	100			1		2	1	2	
Genoa	Nov. 3.	179,822	97			1	9				
Toronto	Nov. 10.	130,000	19					2			
Barmen	Oct. 27.	109,000	40						1	1	
Leighorn	Nov. 4.	102,540	41					1			
Cadiz	Nov. 3.	65,028	43								
Bermuda	Nov. 13.	30,045						6			
Curacao	Nov. 6.	25,000	5								
Vera Cruz	Nov. 8.	23,800	28								
Kingston, Can.	Nov. 16.	17,300	1								
Laguayra	Oct. 27.	7,428	6								
Bluefields	Nov. 10.	2,000	1								
San Juan del Norte	Oct. 22.	780	1								

UNITED STATES.

Port Huron, Mich.—November 17, 1888.—Acting Assistant Surgeon J. K. Farnum writes as follows:

Have just returned from Sarnia, Ont., and while there visited the patients with Dr. Oliver, of Sarnia. The three original patients—one child, nine years old, came from Toronto, Ont.; one Indian student from Owen Sound, twenty years; one woman from Toronto, Ont., thirty years—are all convalescent. From these cases have developed six mild cases, among those quarantined with the original, and all are doing well. All strictly quarantined in a pest-house at a good distance from the city of Sarnia. The Mayor of Sarnia has issued orders for compulsory vaccination. I think there is no danger of Port Huron being infected, although our Board of Health is very deficient. Have had no cases as yet, although papers report some. Could you send me some points by mail to use on the employees of the ferry-boats across the river, as we have the large boats plying constantly?

A supply of vaccine virus has been sent to Acting Assistant Surgeon Farnum.

Portland, Oregon.—November 9, 1888.—Assistant Surgeon Thomas B. Perry reports existence of small-pox in Portland and vicinity.

Tampa, Fla.—Dr. J. P. Wall, president Board of Health, reported as follows, November 14, 1888:

For the week ending to-day there have been reported 6 new cases of yellow fever—5 in the city limits and 1 in the country just outside—and 2 deaths. One of the deaths was that of a woman outside of the city. Her case was complicated by the birth of a child (still-born) directly after being taken with the fever. She died on the 10th inst., and was sick from the 2d inst., and was not seen by a physician till the 8th inst., when I went to see her. The other death was that of a man, and occurred on the 11th inst., after an illness of 12 days. This makes the total number of deaths since the 7th of August, 9. No fever at any other place in the county.

TAMPA, FLA., November 17, 1888.

The inclosed clipping is from a New Orleans newspaper, and is so full of inaccuracies that I venture to call your attention to them. In the first place, the yellow fever did not break out here last year in August, nor was there any here as late as the 2d of September, when I left to attend the Ninth International Medical Congress in Washington. I got back to Tampa on the 25th of September, and learned that the man Turk had died on the 22d of that month with what the physicians who saw him pronounced hæmorrhagic malarial fever. There was no epidemic of yellow fever here when I got home. During the week following the 25th of September I saw 5 suspicious cases of a mild type, and on the 2d of October, 2 cases, which on the 4th of October I announced to the Board of Health to be yellow fever, and on the 5th publicly declared yellow fever to be in Tampa, and advised the people to leave the place. On the 7th or 8th of October I wired you, in answer to inquiry, that yellow fever was here. So you must see that the statement that the presence of fever in Tampa was concealed until the 21st of October is wholly erroneous and without foundation in fact. From the best information that I can get, the fever probably appeared here as early as the middle of September, during my absence.

The city council, and not the Board of Health, declared the epidemic over about the 19th of December, and refugees came flocking back into the place, but, so far as I know, not a returned refugee took the fever, though there were a few cases in January, and one death as late as January 30th. But these cases did not occur in returned refugees, but among those who had been in Tampa more or less during the epidemic.

The fever got into Plant City in October, but was not recognized till the 14th of November, when the first death occurred, a full month after its first appearance there in a refugee from Tampa. And all this time Plant City was keeping up a strict quarantine against Tampa, and enjoying free intercourse by rail with the outside world. In fact, at no time during the winter was any quarantine instituted against Plant City, the majority of her physicians declaring the fever to be malarial.

In April a case was seen by me in Tampa's corporate limits, though practically in the country. Some of the family had had the fever dur-

ing the epidemic, and this case was in a member of the family who had escaped then. After this there was no case of fever in Tampa until the 11th of July, when Mr. Waterman, a commercial traveler, returned from Manatee on the 10th, was taken sick on the 11th, and died on the 21st of July.

Now, so far as I am concerned, I never denied the presence of yellow fever here at any time, when it was here to my knowledge during the winter or any other time; nor was there any here, except the case in April, from January till July, when the man Waterman sickened and died.

Whether McCormick had the fever* or not I do not know. He left here the 27th of July and there was no other case here till the 7th of August. And in view of all the facts in connection with what has occurred at other points, I am strongly inclined now to the opinion that had not Mr. Waterman contracted the disease in Manatee and been sick in Tampa, we would not have had any fever here this summer.

At the proper time I expect to write the history of the epidemic in Tampa, when these false statements will be duly noticed.

I have taken great pains in investigating the introduction of the fever into Tampa, and consequently know something about the facts.

All the concealment of cases of yellow fever that I ever heard anything about—and this, Dr. Caldwell charged in "The Times-Union" in August, in answer to Dr. Holt—was the Orange County and Duval County Boards of Health. So I do not wish to be misrepresented in this matter by your report.

Apologizing for the length of this letter, I am, with high esteem,

Yours very truly,

JOHN P. WALL.

Dr. J. B. HAMILTON.

LETTER FROM DR. MAXWELL ON THE ORIGIN OF THE FEVER.

JACKSONVILLE, FLA., November 17, 1888.

DEAR SIR: It may aid you in making a report of the conduct of yellow fever in Florida, during the last two years, to be informed of what you probably do not know—viz.: that a case of the fever came to this city from Tampa in the latter part of October, 1887.

The facts are, as related to me by the man himself, that a Mr. Lane, an employee of the music house of A. B. Campbell & Co., went into Tampa twice during the month of October, 1887, the latter visit being in the latest days of that month; that he was taken sick with fever whilst in Tampa the last time, and came directly to his home and family in this city; that he was treated by the late Dr. Leonard, who died of the fever during the prevailing epidemic, and his disease was called "yellow jaundice," but, from his description of the symptoms and course of the disease, in connection with his recent exposure in Tampa, I have no doubt was yellow fever.

I was, by invitation of Dr. John P. Wall, chairman of the Hillsboro' County Board of Health, in Tampa at the time Mr. Lane said he was there and was taken sick, and the fever was then a widely prevalent and somewhat malignant epidemic.

There is good reason to believe that a disease which prevailed in Jacksonville in midwinter of 1887-'88, which by a euphemism was called "society fever," was, in fact, as some of the local physicians said at the time, and Dr. Wall and Dr. Porter told me in February they suspected, yellow fever. Of course in the preparation of a history of this disease you must needs have all the facts attainable. It is to assist you in reaching that end that I write this note.

Respectfully,

GEORGE TROUP MAXWELL, M. D.

N. B.—Campbell's music-store is next door to Bucky's store, which Dr. Guitéras defined as the "focus of infection" last fall.

P. S.—Having a knowledge of the topography of Bucky's and adjoining stores, obtained during a residence in Jacksonville twenty years ago, I examined their condition a few days after my return in August last, and reported the terribly insanitary condition of the ground under their floors, in "The Times-Union." An examination was ordered by

the citizens' auxiliary association, but the inspector's report has not been made public. It is understood that his report will corroborate my assertions, and show inexcusable if not criminal culpability on the part of the health officials of the city and country.

MAXWELL.

Camp Perry, Fla.—Surgeon W. H. H. Hutton telegraphs as follows:

November 17th: "Morning report: Present, officers, 5; guards, 10; employees, 30. Refugees arrived, 7; discharged, 6; remaining, 79. Fever camp, 1; critical."

November 18th: "Morning report: Present, officers, 4; guards, 10; employees, 30. Refugees arrived, 10; discharged, 16; remaining, 73. Fever camp, 1; improving."

November 19th: "Morning report: Present, officers, 5; guards, 10; employees, 30. Refugees arrived, 18; discharged, 9; remaining, 82. Fever camp, 1. Geddings has just returned from Green Cove Springs, Fla., and reports 3 serious cases, 1 moribund."

November 20th: "Morning report: Present, officers, 5; guards, 10; employees, 31. Refugees arrived, 20; discharged, 6; remaining, 96. Fever camp, 1."

November 21st: "Morning report: Present, officers, 5; guards, 5; employees, 28. Refugees arrived, 2; discharged, 13; remaining, 85. Fever camp, 1; recovered. Weather very cold."

November 22d: "Morning report: Present, officers, 5; guards, 5; employees, 28. Refugees arrived, 7; discharged, 2; remaining, 90. Fever camp, 1; recovered."

November 23d: "Morning report: Present, officers, 5; guards, 5; employees, 28. Refugees arrived, 4; discharged, 19; remaining, 75. Fever camp closed."

Jacksonville, Fla.—Dr. Joseph Y. Porter telegraphs as follows:

November 15th: "New cases, 16; deaths, 4. Total cases, 4,568; deaths, 396. Patients, St. Luke's, 14."

November 17th: "New cases, 13; deaths, 1. Total cases, 4,596; deaths, 397. Patients, St. Luke's, 14."

November 19th: "New cases, 8; deaths, 4. Total cases, 4,621; deaths, 402. Patients, St. Luke's, 13."

November 20th: "New cases, 22; deaths, 1. Total cases, 4,643; deaths, 403. Patients, St. Luke's, 17."

November 21st: "New cases, 3; deaths, 2. Total cases, 4,646; deaths, 405. Patients, St. Luke's, 15."

November 22d: "New cases, 13; deaths, none. Total cases, 4,659; deaths, 405. Patients, St. Luke's, 14."

Gainesville, Fla.—Assistant Surgeon Martin telegraphs as follows:

November 17th: "Six new cases; 2 white, 4 colored."

November 18th: "Five new cases; 2 white, 3 colored. One death, white."

November 19th: "Five new cases; 1 white, 4 colored."

November 20th: "Three new cases; 1 white, 2 colored."

November 21st: "Two new cases; colored."

November 22d: "Two new cases; colored. No frost yet; temperature, 49°."

Fernandina, Fla.—Surgeon Ross telegraphs as follows:

November 21st: "One new case of yellow fever reported for twenty-four hours ending 6 p. m., November 20th. Careful analysis of status showed 4 cases of yellow fever under treatment in Fernandina yesterday. On no day since my arrival here has total number of cases under treatment been so small as yesterday. Yellow-fever pabulum about exhausted."

November 22d: "Theodore Fairbanks, the acting railroad agent at Hart's Road, attacked to-day; engine sent out to bring him in hospital here for treatment. Shall visit and inspect Hart's Road to-morrow. For twenty-four hours ending 6 p. m., November 22d, no new cases, and four cases reported as total under treatment in Fernandina. Good reason to believe that there are two additional cases of yellow fever under treatment which are not reported as such. There have been about 1,200 cases, and about 38 deaths of fever here this summer. The great majority of these occurred in August and September, before my arrival. The rule, with remarkably few exceptions, is that persons here who have had yellow fever in former epidemics have not had fever this year, and no person, I believe, has had more than one attack this season."

* McCormick's case was undoubtedly yellow fever.—J. B. H.

Palmetto, Fla.—Inspector M. B. Harrison telegraphs as follows:
November 15th: "For week ending November 12th there were, at Palmetto, new cases, 9; deaths, 1. Total cases to date, 84; deaths, 10."

Palatka, Fla.—Assistant Surgeon Magruder telegraphs as follows:
November 17th: "Three cases, one having black vomit, reported at Green Cove Springs to-day."

Enterprise, Fla.—G. F. Carlile, secretary Board of Health, telegraphs as follows:
November 19th: "Four new cases last forty-eight hours."
November 21st: "Surgeon Hutton reports 8 new cases at Enterprise."

Dr. J. F. Hartigan telegraphs as follows:
Brooksville, Fla., November 19, 1888.—"Have inspected Dade City and Brooksville; both places healthy. Leave for Leesburg to-day."
Savare's, Fla., November 20, 1888.—"Am at Eustis to-day; place healthy. Will leave for Ocala to-morrow."
Leesburg, Fla., November 21st.—"Am at Leesburg to-day. No infectious diseases. Leave for Ocala this afternoon."
Ocala, Fla., November 22d.—"Am at Ocala to-day. Place healthy. My tour is completed. Will leave for Washington to-morrow."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

CITIES.	Week ending—	Estimated popu-lation.	Total deaths from all causes.	DEATHS FROM—									
				Cholera.	Yellow fever.	Small-pox.	Varicella.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Meningitis.	Whooping-cough.
New York, N. Y....	Nov. 17.	1,543,396	600	..	..	..	..	..	13	25	24	12	7
Philadelphia, Pa...	Nov. 10.	1,016,758	334	..	..	..	..	..	13	12	8	..	..
Philadelphia, Pa...	Nov. 17.	1,016,758	354	..	..	..	..	..	9	5	18	..	5
Brooklyn, N. Y....	Nov. 10.	805,855	256	..	..	..	..	..	4	5	17	1	3
Brooklyn, N. Y....	Nov. 17.	805,855	296	..	..	..	..	..	8	2	33	1	5
Baltimore, Md....	Nov. 17.	431,879	138	..	..	..	..	..	3	1	6	..	2
San Francisco, Cal.	Nov. 9.	330,000	145	..	..	..	..	..	3	..	7	..	1
Cincinnati, Ohio...	Nov. 17.	255,199	85	..	..	..	..	..	6	1	4	..	..
New Orleans, La...	Nov. 10.	248,000	104	..	..	..	..	..	1	..	2	..	..
Milwaukee, Wis....	Nov. 17.	195,000	57	..	..	..	..	..	1	..	2	..	..
Minneapolis, Minn.	Nov. 10.	180,000	47	..	..	..	..	..	4	..	4	..	1
Minneapolis, Minn.	Nov. 17.	180,000	39	..	..	..	..	..	3	1	3	..	1
St. Paul, Minn....	Nov. 17.	175,000	32	..	..	..	..	..	4	1	2	..	..
Rochester, N. Y....	Nov. 17.	120,000	33	..	..	..	..	..	..	..	3	..	..
Columbus, Ohio...	Nov. 17.	101,885	17	..	..	..	..	..	2	..	..	..	..
Richmond, Va....	Nov. 10.	100,000	30	..	..	..	..	..	1	..	..	..	..
Denver, Col.....	Nov. 16.	96,000	38	..	..	..	..	..	6	..	4	..	..
Toledo, Ohio.....	Nov. 16.	80,000	9	..	..	..	..	..	..	..	..	..	..
Fall River, Mass...	Nov. 17.	65,000	23	..	..	..	..	..	..	3	1	..	..
Charleston, S. C...	Nov. 17.	60,145	37	..	..	..	..	..	1	..	..	..	..
Lynn, Mass.....	Nov. 17.	50,000	15	..	..	..	..	..	..	..	2	..	..
Manchester, N. H...	Nov. 10.	41,000	24	..	..	..	..	..	1	..	..	..	..
Portland, Me.....	Nov. 17.	40,000	14	..	..	..	..	..	..	..	..	..	..
Galveston, Texas...	Nov. 9.	40,000	13	..	..	..	..	..	1	..	1	..	..
Davenport, Ia....	Nov. 10.	33,715	11	..	..	..	..	..	..	3	..	..	..
E. Saginaw, Mich...	Nov. 17.	33,000	6	..	..	..	..	..	..	..	1	..	..
Altoona, Pa.....	Nov. 10.	29,546	5	..	..	..	..	..	..	..	..	..	..
Altoona, Pa.....	Nov. 17.	29,546	4	..	..	..	..	..	..	..	..	..	..
Auburn, N. Y....	Nov. 19.	26,000	4	..	..	..	..	..	..	..	..	..	..
Haverhill, Mass...	Nov. 17.	25,000	5	..	..	..	..	..	..	..	..	..	..
Newton, Mass....	Nov. 17.	21,105	5	..	..	..	..	..	1	..	..	..	..
Newport, R. I....	Nov. 15.	20,466	3	..	..	..	..	..	..	..	..	..	..
Keokuk, Ia.....	Nov. 17.	16,000	6	..	..	..	..	..	..	..	..	..	..
Pensacola, Fla....	Nov. 17.	15,000	7	..	..	..	..	..	..	..	..	..	..

The Medical Microscopical Society of Brooklyn.—At the next meeting, to be held at the Hoagland Laboratory, on Wednesday evening, the 5th inst., Dr. A. Stub will read a paper on "The Micro-organisms found in the Black Vomit and Liver in a Suspected Case of Yellow Fever."

A Circular to Medical Microscopists.—In behalf of the American Association for the Study and Cure of Inebriety, the sum of one hundred dollars is offered by Dr. L. D. Mason, vice-president of the society, for the best original essay on "The Pathological Lesions of Chronic Alcoholism capable of Microscopic Demonstration." The essay is to be accompanied by carefully prepared microscopic slides, which are to demonstrate clearly and satisfactorily the pathological conditions which the essay considers. Conclusions resulting from experiments on animals will be admissible. Accurate drawings or micro-photographs of the slides are desired. The essay, microscopic slides, drawings, or micro-photographs are to be marked with a private motto or legend, and sent to the chairman of the committee on or before October 1, 1890. The object of the essay will be to demonstrate: *First*, Are there pathological lesions due to chronic alcoholism? *Secondly*, Are these lesions

peculiar or not to chronic alcoholism? The microscopic specimens should be accompanied by an authentic alcoholic history, and other complications, such as syphilis, should be excluded. The successful author will be promptly notified of his success, and asked to read, and demonstrate his essay personally or by proxy, at a regular or special meeting of the Medical Microscopical Society of Brooklyn. The essay will then be published in the ensuing number of "The Journal of Inebriety" as the prize essay, and then returned to the author for further publication or such use as he may desire. The following gentlemen have consented to act as a committee: *Chairman*, W. H. Bates, M. D., F. R. M. S. Lond. (President of the Medical Microscopical Society of Brooklyn), 175 Remsen Street, Brooklyn, N. Y.; *John E. Weeks, M. D.*, 43 West Eighteenth Street, New York; *Richmond Lennox, M. D.*, 164 Montague Street, Brooklyn, N. Y.

ANSWERS TO CORRESPONDENTS.

No. 241.—Address the secretary, Dr. J. H. Raymond, 173 Joralemon Street, Brooklyn.
No. 242.—The board is not now in session.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

CREASOTE IN THE TREATMENT OF
PHTHISIS PULMONALIS.

By AUSTIN FLINT, M. D., LL. D.,

PROFESSOR OF PHYSIOLOGY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE,
NEW YORK; VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

WITH REPORTS OF TEN CASES.

By RUTSON MAURY, M. D.,

HOUSE PHYSICIAN IN BELLEVUE HOSPITAL.

In the summer of 1888, on entering upon my service in Bellevue Hospital, I noticed a number of patients in the wards of the third division wearing what are known as "perforated-zinc inhalers." For several weeks these patients had been treated with inhalations of creasote by a method suggested by Dr. Beverley Robinson to Dr. Maury, the house physician, before Dr. Maury entered the hospital. The improvement noted in these cases was so considerable that I directed the treatment to be employed in all the cases of phthisis pulmonalis in the male wards, with the exception of a few cases of the last stages of the disease. A considerable number of cases did not remain under observation as long as two weeks. These cases are not reported. In the ten cases reported from the records kept by Dr. Maury the treatment was followed for two or more weeks. In addition to the inhalations in all the cases reported, creasote was also administered by the stomach, and in some cases other remedies were employed.

The perforated-zinc inhaler is slightly modified by Dr. Beverley Robinson from an inhaler originally made by Squire, of London, and is manufactured by Mr. W. F. Ford, of Hazard, Hazard, & Co., New York, who kindly furnished the accompanying wood-cut illustrating its construction and the method of its application. Its simplicity and the ease and comfort with which it can be worn suggest its use in many diseases in which inhalations are of benefit. The following description of the inhalers is quoted from Dr. Robinson:

"They consist simply of a sheet of perforated zinc or tin, bent into a pyramidal shape and large enough to cover conveniently the nose and mouth. At the apex of the pyramid a bit of sponge is firmly held by means of strings in two bends in the margin of the zinc plate. Between the sponge and the

of inhalers that are applied closely over the face. The inhaler is held in place by two narrow elastic bands, which pass around the ears. Before beginning an inhalation the sponge should be properly moistened with water or alcohol, and the inhaling fluid poured upon it." *

In the cases reported, the fluid used consisted of equal parts of creasote, alcohol, and spirit of chloroform. Of this mixture, ten to fifteen drops were put upon the sponge. The treatment was begun with an inhalation of fifteen minutes' duration three or four times daily, increased until, in some cases, the inhalers were worn almost constantly except at night. There was no irritation produced by the inhalation, all the patients saying that after a few trials it relieved the cough and the irritability of the throat. In some cases in which the sweating at night was very profuse, atropine, $\frac{1}{8}$ of a grain, with fifteen drops of aromatic sulphuric acid, were given at bed-time. In a number of cases in which the appetite was very poor a tonic, usually a mixture of iron, quinine, and strychnine was administered before meals. In some cases in which the cough was very severe a palliative cough-mixture of spirit of chloroform, dilute hydrocyanic acid, and syrup of wild cherry was used. No other medication was employed.

CASE I.—T. W., aged twenty-eight, laborer, was admitted May 19, 1888. The family history was negative. The patient has had cough with expectoration for the past five months, and has lost considerably in weight. He has suffered from night-sweats for the past few weeks. Three weeks ago he had considerable pain in the chest on the right side, followed by some fever and dyspnoea, which have persisted. The temperature on the date of his admission to the hospital was 101.2° F.

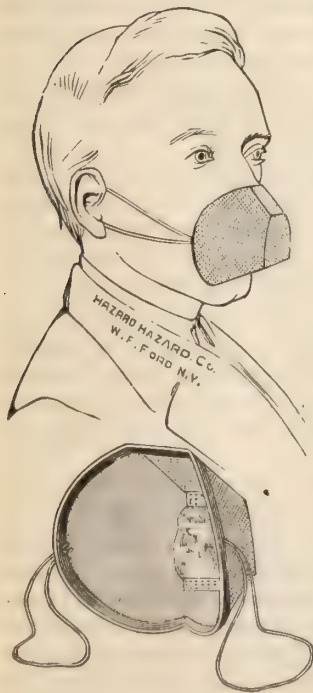
Physical examination revealed the characteristic signs of pleurisy with effusion on the right side, that side of the chest being about half full of liquid. A little clear effusion was taken with an exploring needle, but the chest was not tapped. At the left apex there were signs of solidification, with fine and coarse mucous râles. Tubercle bacilli were found in the sputum and in the liquid taken from the chest with the exploring needle.

The patient was put upon a tonic treatment with a liberal diet. For a number of days the temperature was 100° to 103°, and once or twice was found at 104° F.

June 1st.—In addition to the tonics and the liberal diet, the patient was given creasote, three drops three times daily, and an inhalation of creasote, spirits of chloroform, and alcohol, equal parts, at first for a few minutes three times daily, and afterward for four, six, or eight hours during each day. The temperature was soon reduced to 99° to 100° F., and after the middle of June it was practically normal. The patient was strong enough to be weighed only on June 23d. At that date the weight was one hundred and thirty-two pounds. The liquid in the chest disappeared much more rapidly after the inhalations were begun than before.

July 20th.—The patient left the hospital. There was no cough or expectoration, and no sputum could be obtained for examination. There were no night-sweats, and the patient said he felt as strong as he ever had been. There were still signs of solidification at the left apex, but the râles were very much less and were drier. The weight was one hundred and forty-three pounds and a half.

* Robinson, "A Manual on Inhalers, Inhalations, and Inhalants," Detroit, 1886, p. 37.



mouth and nose there is a vacant space which obviates the stifling feeling which is so objectionable in the use

CASE II.—J. H., aged nineteen, mason, was admitted June 19, 1888. The family history was good. The patient has had cough with expectoration, and night-sweats, but no hæmoptysis. About six months ago, after "taking cold," he began to lose weight and has now lost about twenty-five pounds. The temperature was 104° F. The appetite is very poor. Physical examination revealed the signs of cavities of moderate size at both apices, with mucous râles and gurgles. The patient was immediately put upon creasote, three drops three times daily, and increased to four drops, with inhalations as in Case I, and whisky, $\frac{3}{4}$ ss. three times daily.

June 20th.—The temperature was normal, and the ward- tonic was substituted for the whisky. The weight on this date was one hundred and sixteen pounds.

July 18th.—The patient left the hospital, much improved, with less cough and expectoration, diminished night-sweats, and better appetite. The weight at this date was one hundred and twenty-five pounds. The physical signs were unchanged.

CASE III.—T. B., aged twenty-one, porter, was admitted July 31, 1888. The family history was good. The patient had pleurisy two years ago. The present trouble began in December, 1887, with an attack of diarrhœa. He has had since that time cough and expectoration, but no hæmoptysis. He has night-sweats, and some fever in the afternoon. He has lost thirty-five pounds in weight. The temperature was 99° F., and the weight was one hundred and forty-nine pounds.

On physical examination, there were found dullness, broncho-vesicular respiration, etc., with fine râles at the right apex. Tubercle bacilli were found in the sputum. The treatment consisted of creasote, three to four drops three times daily, tonic before meals, and the usual inhalations.

August 25th.—The patient left the hospital. He said he felt perfectly well. The cough had nearly disappeared, and the weight was one hundred and fifty-nine pounds.

CASE IV.—J. M., aged twenty-three, laborer, was admitted September 6, 1888. The patient has had cough with expectoration, and one pulmonary hæmorrhage within the past three months. He has night-sweats and has lost some flesh. The appetite is very poor. The temperature was normal and the weight was one hundred and sixty-four pounds. Physical examination revealed signs of solidification at the right apex, with fine râles. There were some râles also at the left apex. The sputum contained a few tubercle bacilli. The patient was put upon creasote, four drops three times daily, and the inhalations.

September 22d.—The cough and general symptoms were much improved. The weight was one hundred and seventy-four pounds.

CASE V.—O. G., aged twenty-four, canvasser, was admitted June 23, 1888. Two sisters and a brother had died of phthisis. A year ago the patient had had what he calls an attack of chills and fever, and had not been well since. He noticed cough only within the past four or eight weeks. He had had some expectoration, especially in the morning. He had also had night-sweats, and pain at the apex of the right lung. He had no appetite, and had lost some flesh. The temperature was 99° F., and the weight was one hundred and fifty-four pounds. Physical examination gave signs of slight solidification, with fine mucous râles at the right apex. The patient was put upon the use of creasote, three drops three times daily, with inhalations in the usual manner.

July 6th.—The patient had a chill, with a temperature of 102° F. Quinine, ten grains three times daily, was ordered for a few days.

30th.—The weight was one hundred and seventy-four pounds. On this date the patient had a chill, followed by a temperature of 105.3° F. He kept the bed for two or three days, with diar-

rhœa and fever, and at the end of that time his weight was one hundred and sixty pounds. He was then put on the use of a tonic three times daily, the creasote and the inhalations being continued.

August 25th.—The patient says he feels perfectly well. He has no cough, and all the symptoms have improved. The weight is one hundred and seventy-three pounds. There is no expectoration, and no sputum can be obtained for an examination for bacilli.

October 1st.—The patient has left the ward, and works about the hospital. The inhalations have been continued. There has been no return of pulmonary symptoms. The weight is one hundred and seventy pounds. There are a few râles at the right apex.

CASE VI.—J. C., aged forty, tailor, was admitted July 17, 1888. The father of the patient died of phthisis. The patient had had a pulmonary hæmorrhage ten years before. He had had cough, with whitish expectoration and night-sweats, for the past year. The temperature was 101° F., and the weight was one hundred and fifteen pounds. Physical examination revealed a cavity at the right apex and slight solidification at the left apex. Tubercle bacilli were present in considerable number in the sputum. The patient was put upon the use of creasote, three drops three times daily, with the usual inhalations.

August 25th.—The temperature was normal, and the weight was one hundred and twenty-one pounds. The cough was less, and all the symptoms had improved.

CASE VII.—J. S., aged forty, porter, was admitted July 23, 1888. The family history was negative. Since May last the patient had lost appetite, and had had cough, with at first a whitish expectoration. Subsequently, the expectoration had at times been bloody. He had had night-sweats, but no fever, and said he had not lost flesh. The weight was one hundred and fifty-six pounds. Physical examination revealed solidification, with fine and coarse mucous râles at the right apex. There were a few fine râles at the left apex. Tubercle bacilli were found in the sputum. The patient was put upon the use of creasote, three drops three times daily, with inhalations. The mixture inhaled was composed of equal parts of creasote, spirits of chloroform, alcohol, and tincture of iodine.

August 14th.—The patient left the hospital. All the symptoms had improved, and the weight was one hundred and sixty-four pounds and a half.

CASE VIII.—P. M., aged thirty-one, plumber, was admitted July 31, 1888. The patient had had two or three pulmonary hæmorrhages within the past six months. He had had cough, with copious expectoration and night-sweats, and said he had lost fifty pounds in weight. The appetite was very poor. The temperature was 101° F., and the weight one hundred and twenty-one pounds. Physical examination revealed signs of solidification at both apices, with fine mucous râles. Tubercle bacilli were found in the sputum. The patient was put upon the use of creasote, three drops three times daily, with the usual inhalations.

September 18th.—All the symptoms were much improved. The weight was one hundred and thirty-four pounds.

CASE IX.—P. B., aged twenty-eight, was admitted August 13, 1888. The family history was negative. The patient had been in bed for several days. He had had cough, with copious expectoration and profuse night sweats, for nearly a year. He had had one pulmonary hæmorrhage. Physical examination revealed cavities of considerable size at both apices. Râles of intercurrent bronchitis were heard over the entire chest. Tubercle bacilli were found in the sputum. The patient was treated with iron, quinine, and whisky three times daily, and a cough-mixture, for three weeks.

September 3d.—The patient was put upon the use of creasote, three drops three times daily, and the usual inhalations. All other remedies were discontinued except the quinine and iron.

October 5th.—The only improvement in this case was some increase in strength. During the three weeks before the inhalations he kept the bed, but afterward he was able to be about the ward. The cough is a little less troublesome and the expectoration is slightly diminished. The weight has remained about the same.

CASE X.—P. C., aged twenty-four, was admitted July 7, 1888. The family history was good. The patient had pneumonia about ten years ago. He had had cough with expectoration and two or three pulmonary hæmorrhages within the past five or six months. He now had night-sweats and had lost considerable flesh. The temperature was 103.2° F. The patient was too weak to leave the bed. Physical examination revealed cavities of considerable size at both apices. Tubercle bacilli were found in large number in the sputum. The patient was put upon tonic treatment, a cough-mixture, creasote, three drops three times daily, and the usual inhalations.

July 20th.—The patient was able to sit up. The temperature was normal and the weight was one hundred and four pounds.

October 5th.—The patient is now in a much better condition than at the time of his admission. He is able to be about the ward and his cough is less troublesome. The physical signs are about the same. Tubercle bacilli are present in the sputum, though in diminished quantity. The weight is one hundred and six pounds.

The number of cases of phthisis in Bellevue Hospital is never large, especially in the summer, as cases of chronic disease are usually sent to the Charity Hospital on Blackwell's Island; but even the few cases reported, although not long under observation, seem to me to be very instructive. These cases were unselected and the inhalations were employed in all cases in the male wards, except those of the last stages of the disease and a few in which complications existed. Of the ten cases reported, four presented cavities and in six there was solidification only. All the cases were uncomplicated except one, in which the right chest was half full of liquid, the liquid containing tubercle bacilli. The patients were all males of an average age of about twenty-eight years, the oldest being forty and the youngest nineteen. The average duration of treatment was forty-six days, the longest being ninety-nine and the shortest sixteen days. The average duration of the disease was a little more than six months, the longest being twelve months and the shortest between one and two months. In only two cases was there a family history of phthisis. In two cases the temperature was normal. In one case the temperature was not recorded. In all the others there was more or less pyrexia, the temperature being 101° to 104° F. Night-sweats existed in all the cases. There was a history of loss of weight in all cases but one. Tubercle bacilli were found in eight cases. In two cases the sputum was not examined. In four cases there had been hæmoptysis and in one of these this had occurred ten years before. The inhalations were well borne and gave relief to the cough in all cases. In five cases the treatment was with creasote internally and inhalations. In five cases, in addition to this treatment, tonics, stimulants, or expectorants were employed.

The results which are fairly attributable to the treat-

ment by creasote internally and inhalations are the following:

Weight.—The change in weight was one of the most important results observed. The gain, which occurred in every case but one, could hardly be attributable to changes in surroundings and diet, for the diet, though sufficient, was probably not more liberal than that to which the patients had been accustomed. The following table gives the changes in weight while the patients were under observation:

Case.	Gain in weight.	Remarks.
I.	11½ pounds in 27 days.	Solidification at left apex; right chest half full of liquid.
II.	9 pounds in 28 days.	Small cavities at both apices.
III.	10 pounds in 28 days.	Solidification at right apex.
IV.	10 pounds in 16 days.	Solidification at right apex.
V.	20 pounds in 37 days.	After having gained 20 pounds, the patient had malarial fever and diarrhoea, and lost 14 pounds; he afterward gained 10 pounds in 62 days, making a net gain of 16 pounds in 99 days. Solidification at right apex.
VI.	6 pounds in 39 days.	Solidification at both apices, with cavity at right apex.
VII.	8½ pounds in 22 days.	Solidification at right apex.
VIII.	13 pounds in 49 days.	Solidification at both apices.
IX.	No change in weight.	Large cavities on both sides; general bronchitis; profuse expectoration; patient in bed and very weak.
X.	2 pounds in 15 days.	Large cavities on both sides; patient in bed and very weak.

Temperature.—In seven cases in which there was pyrexia when the treatment was begun, the temperature became normal within a very few days. In two cases (IV and VII) the temperature was normal when the patients were admitted. In Case IX the temperature was not recorded.

Night-sweats.—All the patients had night-sweats. The night-sweats disappeared entirely in three cases (I, III, and V); they were much diminished in six cases (II, IV, VI, VII, VIII, and X); and in Case IX the night-sweats were not affected. In Case IX there were large cavities on both sides, with general bronchitis and profuse expectoration, and the patient was very weak.

Cough and Expectoration.—In three cases (I, III, and V) the cough and expectoration nearly or quite disappeared. In all the cases there was improvement, which was generally quite marked. There was slight improvement even in Cases IX and X, in which there were large cavities. There was considerable improvement in Cases II and VI, in which there were small cavities.

Physical Signs.—The physical signs showed more or less improvement in all the cases, except in Cases II, IX, and X, in which there were large cavities. In Case X the bacilli in the sputum were diminished. In the remaining cases no examinations for bacilli were made after the treatment was begun.

General Physical Condition.—In Cases I, III, and V the patients said they were perfectly well. In Case I there was solidification at the left apex, and the right chest was half full of liquid. In Cases III and V there were signs of solidification at one apex. Tubercle bacilli were present in the sputum in all of these three cases.

The appetite was improved in all the cases recorded.

In all the cases also there was improvement in strength. In Cases IX and X, with large cavities, the patients were in bed and very weak at the beginning of the treatment, but afterward were able to be up and about the ward.

Cases with Solidification only.—In the six cases in which there were no cavities the improvement under treatment was very marked. In three cases (I, III, and V) the strength and weight were regained, all the symptoms disappeared, and the patients expressed themselves as feeling perfectly well. These patients were under treatment for twenty-seven, twenty-eight, and thirty-seven days, respectively.

The gain in weight was considerable in all these six cases. The smallest gain was in Case VII, eight pounds and a half in twenty-two days, and the largest was in Case V, twenty pounds in thirty-seven days. In the four remaining cases the gain in weight was between ten and thirteen pounds. In all the six cases it was recorded that all the symptoms were much improved.

Cases with Cavities.—In Cases IX and X there was but little improvement. In these cases the cavities were large.

In Case II, in which there were cavities of moderate size at both apices, with a loss of weight of twenty-five pounds in six months, under treatment there was a gain of nine pounds in twenty-eight days, the temperature was reduced from 104° F. to normal, there was diminished cough, expectoration, and night-sweats, and the strength and appetite were improved.

In Case VI hæmoptysis had occurred ten years before, there had been "considerable" loss of weight, the temperature was 101° F., and there was a cavity at the right apex. Under treatment there was a gain in weight of six pounds in thirty-nine days, the temperature became normal, and the cough, expectoration, night-sweats, etc., were improved.

Conclusion.—In conclusion, the records of the ten cases reported show that creasote by the stomach and the inhalations, in cases of solidification without cavities, effect prompt and decided improvement in all phthisical symptoms, with increase in appetite, weight, and strength, even with surroundings much less favorable than would obtain in many cases in private practice.

In cases with small cavities much less improvement is to be looked for, but some benefit may be expected.

In cases with large cavities the treatment seems to have little more than a palliative influence.

The observations here recorded are defective as regards the influence of the treatment upon the bacilli. In one case, with large cavities, it was noted that the number of bacilli was diminished. No other examinations for bacilli were made during or after treatment.

No estimate was made of the relative value of creasote taken into the stomach. As regards the inhalations, it is assumed that the chief benefit was derived from the creasote, the spirit of chloroform and the alcohol rendering this agent more volatile, and soothing the mucous surfaces. The inhaled vapor undoubtedly penetrated by diffusion as far as the air-cells. It is by diffusion that fresh air, anæsthetic vapors, etc., penetrate the lungs, and cases of pneu-

monokoniosis illustrate the fact that even solid particles may be carried to the pulmonary vesicles.

I have employed the method of inhalation here described, conjoined with other treatment, in private practice, with good results. In a case of irritative cough of several months' standing, with slight bronchitis and emphysema, but no signs of phthisis, which resisted ordinary treatment, three inhalations produced complete relief, and the cough had not reappeared at the end of four weeks.

PROGRESSIVE MUSCULAR DYSTROPHIES:

THE RELATION OF THE PRIMARY FORMS TO ONE ANOTHER
AND TO TYPICAL PROGRESSIVE MUSCULAR ATROPHY.*

By B. SACHS, M. D.

THE diseases to be discussed in this article have passed under so many different names that it will be necessary, first of all, to state what shall and what shall not be understood by the term "progressive muscular dystrophies."

This term is intended to designate those forms of disease in which a primary progressive wasting of some or all of the muscles of the body is the most characteristic feature, and in which this wasting (atrophy) may or may not be associated with true or pseudo-hypertrophy of some muscles. These primary progressive dystrophies are our chief concern; we have nothing to do with muscular atrophy following cerebral, myelitic, or peripheral nerve disease. One form of disease, however, which is undoubtedly due to changes in the spinal cord we must draw into the discussion. I refer to typical progressive muscular atrophy. This must, in fact, be the basis upon which our discussion shall proceed, for a very large number of the cases and different forms of disease which we shall have to consider were once classed under this term. "Progressive muscular atrophy" was for many years, and with many authors still is, a mere clinical designation, just as locomotor ataxia was a mere clinical term until the pathological anatomy of the disease was established, and the term was finally restricted to cases of tabes dorsalis.

Neurologists are at present engaged in sifting the clinical material, and many cases which only a decade ago would have been labeled as "progressive muscular atrophy" are now recognized to be cases of amyotrophic lateral sclerosis, of syringomyelia, of tumor of the cord, of tabes dorsalis, of poliomyelitis anterior infantilis, or of multiple neuritis. I insist again that we have nothing to do with these issues, and that we are concerned with typical progressive muscular atrophy (type Aran-Duchenne) only in its relation to the primary myopathies or muscular dystrophies.

For the purpose of establishing this relation, I propose, with the above limitations in mind, to give a short historical review of our subject. The discussion which is still waging, and which has already succeeded in establishing at

* Opening paper of the discussion on "Muscular Dystrophies," read before the American Neurological Association at its fourteenth annual meeting. With some few omissions and corrections, the paper is printed as read.

least six different forms of progressive muscular wasting, began along two different lines with the creation of two distinct diseases—viz., typical progressive muscular atrophy, and pseudo-hypertrophic muscular paralysis. Let us first take up the history of “progressive muscular atrophy.”

Duchenne, in 1849, was the first to describe this disease, and embodied his observations in a paper presented to the French Institute (1). In the next year Aran (2) gave a full description of the same disease and reported a number of cases; the same was done by Cruveilhier (3) three years later, but the full dignity of the disease was not recognized until Duchenne's classic account of it appeared in his famous work on “*L'Électrisation localisée*” (4). Duchenne distinguished two forms—progressive muscular atrophy of the adult, and progressive muscular atrophy of infancy. The latter will come up for consideration, together with the new type of muscular atrophy which Landouzy and Déjérine have described and advocated. The former type remains almost in all particulars as Duchenne described it. Modern authors, including Charcot, Leyden, Strümpell, Hammond, Gowers, and others, have been able to add but very little to Duchenne's original description. The chief characteristics of this form are as follows:

Progressive Muscular Atrophy (type Aran-Duchenne).

—This form begins in a large majority of the cases with an atrophy and corresponding weakness in the small muscles of the hand (thenar and hypothenar). The atrophy spreads from muscle to muscle (“*atrophie individuelle*”). Beginning, as a rule, with the adductor pollicis longus, it involves, next in order, the opponens pollicis and deep muscles of the thenar; from these it extends to the hypothenar, the interossei, the flexors and extensors in the forearm. At this stage the disease may remain stationary, or it may spread to the flexors in the upper arm, to the deltoid, possibly the triceps, and finally to the muscles of the trunk, the shoulders, and the back. Duchenne recognized the fact that the atrophy may begin, in exceptional cases, in the trunk, in the shoulders, or in the legs.* Certain it is that in those cases in which the atrophy begins in the hands, the legs are not affected until very late in the course of the disease. One marked exception to this rule has occurred in my own practice in the case of a woman aged forty, in whom the atrophy attacked almost simultaneously the small muscles of the thenar and the anterior muscles of the thigh. This case had all the other symptoms of typical progressive muscular atrophy.

The atrophied muscles in progressive muscular atrophy exhibit fibrillar contractions and as a rule retain their faradaic contractility. There may be a diminution of faradaic or galvanic excitability proportionate to the wasting of some muscles, and a complete or partial reaction of degeneration may be present in other muscles. The march

* Of these exceptional cases mentioned by Duchenne a considerable number will now be relegated to other forms of muscular atrophy. Duchenne states that only two cases in one hundred and fifty-nine began in the legs. Hammond said in the first edition of his treatise on “*Nervous Diseases*,” p. 66, eight cases in twenty-nine; in his last edition, p. 535, he says only six in fifty-two cases.

of the disease is steadily progressive. Heredity is a strong factor in the disease, as is shown by the remarkable series of cases published by Naunyn and Eichhorst in the “*Berliner klinische Wochenschrift*,” and by the account of the Weathersbee family given in the later editions of Hammond's treatise, although the latter cases probably belong to the peroneal type, to be discussed later on. Osler's cases (5) also give strong proof of heredity.

With the exception of the factor of heredity, all the clinical features, as given above, were known to Duchenne. For many years, too, the clinical features of progressive muscular atrophy were beyond question. All discussions that followed related to the question whether this disease was of spinal or peripheral origin. Duchenne first regarded the disease as of peripheral origin, but in his third edition retracted this view, convinced, as he says, by the pathological and anatomical facts gathered by Charcot and Joffroy (6), Lockhart Clarke (7), Hayem (8), and others (9). To Clarke, and above all to Charcot and his school, we owe the advances made (in the years 1860 to 1870) in our knowledge of the pathology of progressive muscular atrophy.

The main changes found are these: A sclerotic and pigimentary atrophy of the ganglion cells of the anterior horns, inflammatory changes in the neuroglia, increased size of the blood-vessels, and proliferation of the cellular elements. In fresh preparations granular corpuscles are found, and, according to the degree and stage of the disease, the anterior gray cornua are reduced in all diameters, and the ganglion cells either atrophied or entirely lost. The anterior nerve-roots are affected secondarily to the lesion of the gray substance. The nerve-fibers are not all destroyed, a number of them remaining intact. Those that are destroyed exhibit the appearances of simple atrophy—a point to which Charcot* alludes as distinguishing these cases from infantile spinal paralysis.

The theory of the disease was and is, that the inflammation spreads slowly from the ganglion cells of the anterior horns along the anterior nerve-roots without destroying as many of these fibers as is the case in infantile poliomyelitis. The atrophic changes in the muscles are, on this hypothesis, the direct result of the irritation which begins in the cells of the anterior horns and is propagated thence through normal or only half-wasted nerve-roots to the peripheral muscular fiber.

The earlier pathological investigations erred in various respects; first of all, all changes in the spinal cord were not noted, the white columns of the cord were not carefully examined. In consequence of this inadvertence in the examination of pathological specimens and on account of insufficient clinical description, many cases of amyotrophic lateral sclerosis were recorded as cases of progressive muscular atrophy. It is Charcot's great merit to have done pioneer work in this, as in so many other neurological problems. In France, Charcot (10) succeeded in making his *tephro-* (*polio-*) *myélite chronique parenchymateuse* the anatomical substratum of Duchenne's progressive muscular atrophy.

* “*Maladies du système nerveux*,” vol. ii, p. 209.

From this time onward German investigators play a very important rôle in the solution of the problem under discussion, attacking the problem both from the pathological and from the clinical standpoint. Bamberger and Recklinghausen (11) published two cases of Duchenne's atrophy in which no changes could be found in the spinal cord post mortem, but it was not until the appearance of Friedreich's great monograph (12) that the possible peripheral origin of progressive muscular atrophy was again pushed into the foreground.

Friedreich maintained that the changes found in the anterior nerve-roots and in the anterior cornua, in cases of progressive muscular atrophy, were secondary changes, and to this he allowed no exception. According to Friedreich's views, progressive muscular atrophy is a primary chronic myositis which is followed in due course of time by secondary changes in the nervous system. The intermuscular nerve-filaments are the first to be affected, and from these nerve-filaments an ascending neuritis travels along the peripheral nerve-trunk to the anterior roots of the spinal-cord segment; the neuritis of these anterior nerve-roots may spread to the cord and here set up chronic myelitic changes which will vary greatly in degree and distribution; the extent and character of the changes will, according to Friedreich, depend upon the extent of the muscular affection. The changes in the peripheral nerve-fibers and in the ganglion cells of the anterior horns are the result of the impaired motor functions of the affected muscles (*op. cit.*, p. 118 and 124).

On this theory alone, Friedreich insisted, can we explain why in certain cases a wide-spread muscular atrophy is associated with changes in the cervical segment only, as in the cases of Dumesnil (13), of Lockhart Clarke and Gairdner (14), in the cases of Clarke and Cooper (15), Clarke and Johnson (16), and others, in which changes were found in the spinal cord and none in the nerve-roots. Friedreich claims that the nerve-roots were not properly investigated; on the other hand, the cases of Recklinghausen, of Friedberg and Cruveilhier, of Trousseau, and his own cases (Nos. 4 and 21), proved to him that changes may occur in the muscles themselves, or in the nerve-trunks and anterior nerve roots, and not in the spinal cord; but Charcot (*op. cit.*, p. 209) very correctly protests that all these cases upon which Friedreich's proof rested were examined before the present successful histological methods for staining the spinal cord had come into vogue, and that they therefore prove nothing.

While Friedreich's judgment unquestionably erred in regard to many of these cases, the error can be explained, since many of the cases upon which he based his views are now known to belong to other forms of muscular atrophy in which there is no accompanying change in the spinal cord. As regards typical progressive muscular atrophy, the investigations of later years have put the spinal origin beyond question, although, as Schultze (17) has shown in his excellent monograph, there are but two cases of Duchenne's atrophy [cases of Pierret-Troissier (18) and of Strümpell (19)] in which the anterior gray matter was the only part affected, and alone responsible for the wide-spread

muscular atrophy. To this list we might add the case of Wood and Dercum (20) if the clinical history were not unsatisfactory. Schultze arrives at his conclusions by excluding even those cases in which the nuclei of the medulla had become involved by extension of the process. Without wishing to depart from the subject before us, I may intimate that these pathological researches prove that, although progressive muscular atrophy is of spinal origin and is a distinct clinical entity, it is not necessarily a morbid entity, and in most cases represents an early stage of one of several spinal-cord diseases.

It is now time for us to retrace our steps and note the development of our knowledge regarding pseudo-hypertrophic muscular paralysis.

The history of this form can be related in few words. The clinical features as laid down by Duchenne, Griesinger, Seidel, and others have been universally accepted. These authors, and all who followed them, fastened upon the increase in the size of some muscles as the characteristic symptom of the disease, and have largely disregarded the wide-spread muscular atrophy which is present in many cases of pseudo-hypertrophy.

The earliest cases of pseudo-hypertrophy of muscles were described by Meryon (21) in 1852. Similar cases had been described by Charles Bell in 1830, but were not valued at their true worth, and Meryon even maintained that his cases were intimately related to Cruveilhier's (Aran-Duchenne's) atrophy. Oppenheim in 1855 published a thesis at Heidelberg on progressive muscular atrophy in which he reported a number of cases of pseudo-hypertrophy, without, however, making a distinction between these cases and Duchenne's type. It was Duchenne again who, in a paper (22) published in 1861, first called attention to the increase in the volume of certain muscles as the important feature in the disease, and in his "Électrisation localisée" established this type of disease for all time. Since that time innumerable cases have been published, enabling Gowers (23) in 1879 to base his studies upon a series of 220 cases, some of these, however, evidently belonging to other categories. The clinical features have been verified so many times over that we need not in this paper analyze all the cases, but can, without hesitation, present the general features of the disease.

Pseudo-muscular hypertrophy or pseudo-muscular sclerosis (Jaccoud), atrophie musculorum lipomatosa (Seidel) (24), is a disease of early youth, the vast majority of cases beginning before the age of six. Boys are affected somewhat more frequently than girls, and there is good proof of heredity, the disease, although largely affecting boys, being most frequently inherited through the mother. Meryon's cases appeared to form an exception (*vide* Gowers, *op. cit.*, p. 24). The first symptoms are a weakness in the muscles of the leg, a waddling gait, and an apparent increase in the size of some of the muscles of the leg. In many cases the calves only are hypertrophied; in others the calves and thighs, and in rarer cases, like one now under my observation, the disease is limited to, or at least begins in, the thigh muscles.

Author's Case I.—A. K., aged ten. Mother has had six children; one died of "brain fever" and one of croup. Four

living, one older than patient, all healthy. No history of heredity. Patient, a stout child, a newsboy, had first teeth at four months; when one year old began to walk. At one year and a half showed weakness and could not walk alone; was provided with some sort of machine with which he learned to walk. Was treated for rickets. Youngest sister has distinct rickets at present. No change until last December, when parents noticed that he was getting lamer. Mother states that thighs were always large; had difficulty in finding trousers that would fit the boy in the thighs. Boy could never walk as other children did, and could never run after others. He now complains of great fatigue, and when walking throws himself down on the grass from mere fatigue. Examination shows increase of volume of anterior thigh muscles of both sides, most marked in the middle portion of the vasti. Calves not hypertrophied; no other atrophy anywhere except in the serratus anticus of the right side. Grasp of both hands normal; knee-jerks present; all electrical reactions normal. With the assistance of Dr. Peterson I excised two pieces of muscle from the left vastus externus which will be referred to in a later section of this paper. The wound healed readily; boy complains of greater weakness in the leg from which pieces of muscle were removed.

Duchenne made out three stages of the disease. In the first, difficulty in standing and walking, and weakness of muscles of lower extremities and of sacro-lumbar region. In the second stage the hypertrophy becomes the prominent feature, spreading to various muscles of the body, and in the third stage there is increased feebleness of the muscles of upper and lower extremity of the trunk. Other authors recognize a weakening of the sacro-lumbar region and in a general way a weakness of the upper extremities, but, in view of Erb's recent studies, it is due to Gowers to state that he called attention to the fact that in many cases of pseudo-hypertrophy the "infraspinati and deltoids are often increased in size. . . . The latissimus dorsi is commonly much wasted, and so also is the lower (sterno-costal) portion of the pectoralis major. . . . The forearm muscles are rarely affected."

To complete the clinical picture we must in addition refer to the lumbar lordosis (probably due to the weakness of the extensors of the hip), to the occasional presence of contractures, and to the peculiar difficulties in rising from the ground (the patient climbing up upon himself) which are present in some cases, but not necessarily in all, and to which Gowers attaches too much importance in making it the cardinal symptom of the disease. My patient has distinct pseudo-hypertrophy, but rises from the floor with the greatest ease. In a general way it is to be noted that there are no fibrillar contractions in the affected muscles, no changes in the electrical reaction, except diminished excitability to both currents, no sensory disturbances, and the patellar reflex may or may not be present. As a typical example of pseudo-hypertrophy with unusual atrophy of the upper extremities I will cite the following case now under my observation:

Author's Case II.—M. K., girl, aged twelve years and a half; mother has one other child living and healthy. One son died at age of twenty-four of meningitis. Patient first seen by me two years ago. History showed that child had severe fright at age of ten months. Child has always been very nervous; learned to stand and walk at usual age, but had diphtheria at age of four,

since when the disease has become much worse. Legs first grew thin. The calves increased in size about four years ago. Child has always had characteristic difficulty in walking and rising from the floor. Examination showed decided weakness in posterior group of leg and thigh muscles; calf and thigh muscles distinctly hypertrophied. Nerves and muscles of lower legs react well to faradaic current, much more readily on indirect than direct excitation. No atrophies anywhere in the body, none around shoulder girdle; hands normal. Child has difficulty in getting upon a chair, and in descending comes down with a bound.

Thigh—left, $13\frac{1}{8}$ inches; right, $13\frac{1}{8}$ inches.

Calves—left, $10\frac{1}{2}$ inches; right, $10\frac{5}{8}$ inches.

Examined the child again after two years; found condition very much the same. Thighs—left side, 16 inches; right, $15\frac{1}{2}$ inches. Calf—left side, 11 inches; right, $10\frac{1}{2}$ inches, showing that the growth of the calf muscles has not kept step with the growth of thigh muscles. Muscles of calf and anterior thigh muscles still appear large. Resistance to passive movements very much diminished, particularly in extensors of thighs. Atrophy of sternal portion of the sterno-cleido-mastoid; left shoulder stands out more prominently than right, but shows no hypertrophy. *All arm and forearm muscles thin*; distinct atrophy in the muscles of the interosseous spaces; grasp very weak; right 18, left 18. In walking, both feet assume valgus position. Arms are in marked contrast to legs. Length of arms, 25 inches; length of legs, 28 inches. Electrical examination: All muscles respond promptly to faradaic current, except interossei and vasti of both sides, which require very strong currents. Galvanic response diminished in interossei and in muscles of thenar, but formula not altered.

Having agreed to accept the foregoing description and histories as typical of what is ordinarily called pseudo-muscular hypertrophy, we must now devote a little more attention to the pathological anatomy of the disease. Cases of pseudo-hypertrophy with autopsies are relatively few, and for that reason the evidence must be sifted carefully.

Middleton, in his very excellent paper (25), collected seventeen cases of pseudo-hypertrophies with autopsies; one of these (26) must be excluded from the list as being a clear case of amyotrophic lateral sclerosis. Schultze (*op. cit.*, p. 36) has added to this list the two cases of Middleton, one by Berger (27), two cases described by Günther (28), one by Pick (29), and one by Friedreich (*op. cit.*, p. 347), making twenty-three cases in all.

Of these twenty-three cases, those of Friedreich, Meryon (Case II), Kesteven (30), Baeg (31), Brigidi (32), Ross (33) (Case I), and of Günther must be excluded, either because the spinal cord was not examined microscopically or because the examination was not properly made. Of the fifteen remaining cases, *the spinal cord and anterior nerve-roots were found absolutely normal* in ten, and in five others the changes that were found could not be held responsible for the changes in the muscles. These ten cases (34) are unobjectionable in every point; their clinical histories are very similar in every respect and are sufficient proof of the fact that pseudo-hypertrophy of the muscles is *not* dependent upon changes in the spinal cord.

In the endeavor to increase this list I have carefully searched for earlier cases with autopsies, in our own literature in particular, which might have escaped Schultze's notice, and have furthermore endeavored to collect cases

which have appeared since the publication of Schultze's monograph, but the total increase is not great.

First of all, attention should be directed to Gibney's (35) case, which was presented to the American Neurological Association two years ago. The history of the boy, aged sixteen at death, who had been under observation for ten years, is a typical one of the disease. There was first distinct enlargement of the calves, followed later on by atrophy. A brother is affected in the same way. Dr. Amidon, who examined the cord, reports: "The only lesion appeared to be in the ganglion cells of the anterior horns. . . . About one half of the cells seemed to have disappeared, leaving no trace. The remaining ones are poorly defined, small, and in many instances processless. . . . Lesion more marked in the dorsal than in lumbar region."

Through the kindness of Dr. Amidon, I have been permitted to re-examine the specimens, and I must confess that the case would appear to show that there are no serious cord changes in pseudo-hypertrophic paralysis. Processless ganglion cells mean as little in the spinal cord as processless pyramids mean in the cortex, and a diminution in the relative number of cells in any one section is a point exceedingly difficult to determine, and, if present, is more apt to be a secondary than primary affair. I hope that both Dr. Gibney and Dr. Amidon will concur in this view of their case.

The only other cases of pseudo-hypertrophic paralysis *with autopsies* which I have been able to find were these: Westphal (36) reported the cases of two sisters, both affected with typical pseudo-hypertrophy, in the one case characterized by unusual increase in the volume of many muscles and by slight involvement of the facial muscles. Westphal found *no changes whatever either in the cord or in the peripheral nerves*. Coming from so distinguished an author, these facts deserve the greatest consideration.

Middleton (37) has described another interesting case with enormous pseudo-hypertrophy and a wide-spread atrophy, including even the masseters, but the cord did not harden well and a microscopical examination could not be made. The case is, therefore, useless for our present purposes.

Further autopsies on typical cases of pseudo-hypertrophy are extremely desirable, but Westphal's cases, together with the others analyzed above, place the non-spinal origin of pseudo-hypertrophy beyond question.

These facts do not appear to be properly appreciated as yet, for we find Dr. Inglis (38) very recently reporting several interesting cases of pseudo-hypertrophy and assuming that all pathologico-anatomical facts point to the spinal cord as the seat of disease. Dr. Inglis gets over the discomforting negative facts by stating that "the cases in which the post-mortem examination shows the cord visibly intact do not invalidate this idea (the spinal origin of pseudo-hypertrophy), and that the defect in the distal ends of the motor fibers, while not in every case accompanied by atrophy of the central cells, is yet the indication of an impaired activity of those cells." It is more surprising still to find Hammond (39) disregarding the evidence of the last ten years and adhering to the spinal theory of pseudo-hy-

perrophic paralysis, and even going so far as to entitle the disease "pseudo-hypertrophic *spinal* paralysis." Hammond's conclusions are based on cases of Barth (40), Müller (41), and Lockhart Clarke (42). Barth's case is one of amyotrophic lateral sclerosis; Müller's case was complicated by cerebral disease and therefore useless for the determination of the anatomical lesion; while Lockhart Clarke's case showed changes which are not primary and which Gowers, whose case this was, acknowledged (in the "Lancet" for 1879) to have been possibly due to the paralysis of long standing and to the frequent pulmonary troubles.

At this stage of our studies let us note that careful clinical investigation and post-mortem examinations have shown among other facts that a wide-spread atrophy is common to progressive muscular atrophy (type Aran-Duchenne) and pseudo-hypertrophy, but that the absence of all changes in the central nervous system, the absence of fibrillar contractions, and the absence of reaction of degeneration in cases of pseudo-hypertrophy, separate it widely from the former disease. Later on we shall see that a very intimate relation exists, however, between pseudo-hypertrophy and certain other forms of muscular dystrophy which were formerly included under the general heading of progressive muscular atrophy.

The process of distinguishing these forms from progressive muscular atrophy was of slow development, and with the steps of this process we shall become best acquainted by alluding to a few excellent articles published between the years 1870 and 1880.

Lichtheim (43) was one of the first to take up the cudgels for Friedreich's theory of progressive muscular atrophy. In 1878 he published a paper on a case of "progressive muscular atrophy without disease of the ganglion cells of the anterior horns." A condensed history of his case is as follows:

Louise Groth, aged forty-two. With exception of an acute fever (typhoid), was well until the age of twenty-seven. Severe pains in right arm lasting one day and followed next day by weakness in the arm. Continued her work as laundress for nearly a year in spite of increasing weakness. Was improved by treatment and resumed her work. After another year, a severe confinement (forceps); formation of abscess around right ankle; right leg grew weaker; weakness and atrophy of right upper arm were superadded. Worked with interruptions for seven years longer and gave up work two years and a half previous to Lichtheim's examination. No hereditary influences. From the description of loss of function, I infer that the following muscles must have been affected: Muscles, wasted—serrati, right > left; latissimi, right > left; pectorals, right > left; deltoids, right > left; lower portion of trapezei, right > left; and various facial muscles (can not pull up nose, frowning difficult, can close eyes, can not whistle, no difficulty in mastication or deglutition). Wasted also—intercostals, supraspinati, biceps brachialis, and supinator longus of both sides; no atrophy of forearms or triceps. Thenar and hypothenar wasted, left > right. Opponens pollicis in fair condition; tremors when fingers are moved. Gluteal muscles wasted; left calf slightly larger than the right; no hypertrophy. Abdominal muscles normal. No sensory disturbances; no reaction of degeneration; patellar reflex weak but present. Death from phthisis. Autopsy (Cohnheim): *No changes in the cord*. Flexors

of thighs show fatty degeneration; also fatty degeneration and atrophy of right rectus abdominis. Muscular fibers: atrophy of contractile elements in diseased muscles; increase of connective tissue, and remaining fibers exhibited a highly nucleated perimysium internum. No changes in peripheral nerves.

This case of Lichtheim was followed up by one of Erb and Schultze (44) and one of Kahler (45). The former authors endeavored to disprove Lichtheim's case by a case of typical progressive muscular atrophy with changes in the cord. Erb's criticisms were quite severe, but they have lost all their force since Schultze showed in later years that the changes which he and Erb found were not sufficient to account for the muscular changes, the cells that were atrophied being now known to be in no physiological connection with the muscles that were atrophied; and, furthermore, Erb has since decided that Lichtheim's case, though a very important one, belongs to the type which Erb (34) first described a few years later. And to this most important class of cases we must now devote our attention.

Erb's Juvenile Form.—Erb described this new form of disease in his "Elektrotherapie," but sufficient attention was not paid to this juvenile form until Erb again described the disease in an article entitled "Ueber die juvenile Form der progr. Muskelatrophie," in the "Dtsch. arch. f. klin. Med.," 1884.

The following is a typical case of Erb's juvenile form, the history of which will bring out clearly enough the differences of this form and typical progressive muscular atrophy.

ERB'S CASE I.—Male, aged forty-six. No hereditary history, no syphilis; several acute diseases in childhood. At the age of fifteen noticed that the right arm was weaker and thinner than the left. No pains or paræsthesiæ. Trouble did not grow worse until about the age of forty; at that time the legs and left arm became involved; no sensory, vesical, or sexual disturbances.

Examination revealed changes in the following muscles:

Wasted: Both pectorales major and minor, both trapezii, latissimus dorsi, serrati ant. maj., rhomboids with exception of upper portion of right rhomboid superior, both sacrolumbales and longissimi dorsi, deep neck muscles, levator anguli scapulæ right > left, brachialis anticus right > left, supinator longus (both sides), triceps right > left, gluteal muscles right > left, ilio-psoas right > left, quadriceps, tensor fasciæ; anterior leg muscles weak with exception of tibialis anticus; abdominal muscles, diaphragm paretic.

Normal: Sterno-cleido-mastoid, levator anguli scapulæ dexter, coraco-brachialis, flexors and extensors of forearm, thenar and hypothenar, adductors, flexors of leg, calf muscles, small muscles of foot.

Hypertrophied: Deltoid left > right, infraspinati muscles, both teretes.

No ataxia; patellar reflex present; no fibrillar contractions; diminished electrical excitability of muscles, but no trace of reaction of degeneration.

The other cases of Erb resembled this one in every respect, except that in at least one of his patients a later examination revealed an incipient hypertrophy of the calves.

Erb has taken the trouble to hunt through medical literature, and proves very conclusively that similar cases have been described by Aran, Duchenne, Friedreich, Ross, and others, either as cases of progressive muscular atrophy or

of pseudo-hypertrophy. Erb thus summarizes the chief features of this juvenile form: It is a progressive wasting with weakness of certain groups of muscles, beginning either in childhood or early youth, involving, as a rule, the muscles of the shoulder girdle, the upper arm, the pelvic girdle, the thigh, and the back, the forearm and leg muscles remaining intact for a very long time. The atrophy may be associated with true or pseudo-hypertrophy of some muscles. Fibrillar contractions and reaction of degeneration are never present. No sensory or visceral disturbances. He adds that the wasting is distributed in a typical manner. The pectorals, trapezii, latissimi dorsi, the serrati, the rhomboids, as well as most of the upper arm muscles and supinators, are apt to be wasted, while the deltoids, supraspinati and infraspinati are either normal for a long time or hypertrophied. The preservation, furthermore, of the hand and forearm muscles gives a very striking clinical picture.

This disease Erb has chosen to call the juvenile form of progressive muscular atrophy—a very unfortunate term, since many of the cases exhibited no symptoms until the patient was well advanced in years, and others again began in early infancy. Erb's description has been accepted by Nothnagel, Schultze, Charcot, Eulenburg, Remak, Gowers, and many others.

Upon the exact distribution of the atrophy and hypertrophy, as demonstrated by his cases, Erb lays the very greatest stress. According to his view, well-preserved forearms, atrophied upper arms, hypertrophied deltoids, and wasted scapular muscles would be almost sufficient for a diagnosis of his special form. In the lower legs an almost analogous change occurs; the thighs and glutæi are well wasted, while the leg muscles and calves are well preserved.

The question arises whether Erb did not attach too much importance to this exact topographical distribution of muscular atrophy and hypertrophy. He alleges perfect identity between his juvenile form and pseudo-hypertrophy; On page 518 he says: "If this disease occurs in earliest childhood and is not associated with any considerable lipomatosis, the disease is what has been termed hereditary muscular atrophy. If it happened to be associated with early-developed and excessive lipomatosis, particularly in the lower extremities, it is synonymous with so-called pseudo-hypertrophy. . . . But all of these forms are identical with one another and merely represent different manifestations, a different march of the disease (*Verlaufsweisen*), and varying degrees of intensity of the same disease."

The relation to hereditary muscular atrophy I will discuss later on, but, as for its relationship to pseudo-hypertrophy, is it not curious that Erb's form is so far less frequent than the ordinary pseudo-hypertrophy? To be sure, this might be explained in a number of different ways. First, the accuracy of description has been at fault in many cases. Most authors have had the hypertrophy, and that only, in mind, and have not, with the exception of Friedreich and Gowers, paid much attention to the atrophy in the upper extremities; and, if detected, most authors have described the atrophy so poorly that a clinical picture such as Erb discovered can not be made out from their descriptions. This is true not only of older writers, but also of

those that have written since the appearance of Erb's paper. I have analyzed all recent cases of pseudo-hypertrophy for the purposes of clinical differentiation, but in the fewest cases have even the functional motor disturbances been stated with sufficient clearness to permit an inference as to the wasting of certain muscles, and definite statements with regard to the atrophy of this or that muscle are entirely wanting in the majority of cases. I wish incidentally to remark that every case of pseudo-hypertrophy should be examined with the greatest care regarding the condition of the upper extremities, and the smallest amount of atrophy or hypertrophy of any muscle should be distinctly noted. I have found a slight change in the faradaic response of symmetrical muscles a valuable hint in getting at an incipient wasting with corresponding paresis. Such a condition would, in at least one case, have escaped my notice if I had not examined both pectorals and had found that the one gave a much more lively response to the faradaic current than the other did.

And yet, allowing for all these possible errors, an examination of American cases, for instance, has convinced me that Erb's juvenile form is very much rarer in this country than typical pseudo-hypertrophy is. In England, Ormerod (46), Ross (47), and Dreschfeld (48) are the only ones who have described cases resembling Erb's form, and Ormerod's case contains several atypical features.* In this country none have to my knowledge been published as cases of Erb's juvenile form, though, as Seguin has pointed out, Mastin's cases of hereditary ataxia may be cases of Erb's form. I have not been able to get at the original paper of Mastin. (See Seguin's abstract in "Ann. of the Univers. Med. Sci.," i, 1888.)

During the past two years I have waited patiently for an example of Erb's form to turn up, without, however, meeting with a single one. This disease may be as much less frequent in America as the Landouzy and Déjérine type is less frequent in Germany than it is in France. Furthermore, the thought naturally occurs to one that Erb's special form may represent in many instances a late stage of pseudo-hypertrophy, and that the majority of cases of this disease dying at an early age never reach this stage. And yet we must not forget that Erb has described several cases of his typical form beginning at a very early age; and, on the other hand again, we well know that cases of typical pseudo-hypertrophy may be associated with atrophy in the upper extremity without this atrophy assuming Erb's characteristic distribution, as proved by my own case (No. II), cited above.

In view of such cases as this one and the reasoning followed above, it seems to me that the topographical distribution of the atrophy or hypertrophy can not be depended upon to prove the absolute identity between pseudo-hypertrophy and the juvenile form, and that for the present

pseudo-hypertrophy deserves the rank of a special form. Their relationship seems to me, however, to rest upon several cardinal symptoms which they have in common:

First. Upon a progressive wasting beginning in early life, associated with hypertrophy at some time during the course of the disease.

Second. Upon the entire absence of fibrillar contractions.

Third. Upon the absence of the reaction of degeneration.

Fourth. Upon the absence of changes in the spinal cord, the autopsy in Lichtheim's case going to prove this last statement. My friend Dr. Gray ("New York Med. Journal," May 18, 1888) is therefore wrong in stating that no autopsy has ever been obtained in a case of Erb's type.

These cardinal symptoms several other forms of muscular atrophy have in common with the two forms just discussed.

(To be concluded.)

WHITEHEAD'S OPERATION FOR HÆMORRHOIDS.

By CHARLES B. KELSEY, M.D.

THIS operation consists in amputating the entire "pile-bearing" region of mucous membrane. An incision is made around the anus at the junction of the skin with the mucous membrane; the latter, with the hæmorrhoidal tumors, is dissected upward till the upper limit of the hæmorrhoids is passed, and then amputated by a circular incision. The mucous membrane is then drawn down from above and stitched to the skin. Various modifications have been made in the technique—all intended to facilitate the performance of a naturally difficult, tedious, and bloody operation; but no essential change has been made in the guiding principle.

The operation is based by its inventor upon the following propositions, all of which appear to be at least open to discussion: He says: "During the first five years of my professional career I employed the ligature in the few cases of severe hæmorrhoids that came under my treatment. I operated according to the most approved method of that time, cutting through the skin and mucous membrane, and applying the ligature in the artificially produced pedicle. The number of cases operated upon did not, perhaps, exceed a dozen; nevertheless, they were sufficient to convince me that the ligature by no means produced a radical cure. One of my patients returned almost as bad as ever, and the reports I heard of another were anything but satisfactory."*

This statement is so obviously open to criticism that it seems almost heartless to comment upon it. A young man in early practice operates a dozen times, and two of his cases are failures! Older men operate thousands of times and never have a failure! Whatever else may be raised as an objection to the operation by ligature, this, I believe, is the first time it has ever been impeached on the ground that it was not radical. Men have objected to it because it caused pain, because it had been followed by untoward con-

* In one of Ormerod's cases there was partial reaction of degeneration in the infraspinatus, the very muscle which Erb found remained healthy longest; but Ormerod's electrical examinations are not very satisfactory, for he alludes to the polar formula being altered with regard to the anode—a condition which is found in perfectly healthy muscles.

* "Brit. Med. Jour.," Feb. 26, 1887.

sequences, and because they believed a radical cure could be obtained by other methods preferable, but never because it failed to cure.

The second proposition is better stated and less open to obvious criticism, but none the less, I believe, an error. The author says :

"After abandoning the ligature, I adopted the clamp and cautery. . . . My experience, which exceeded fifty cases, resulted eventually in the conviction that it was decidedly inferior to the ligature. The immediate risks I found to be greater and the failures by recurrence more numerous. Certainly it was more frequently followed by secondary hæmorrhage, and I am acquainted with cases where the bleeding which is reported to have taken place must have been little less alarming after the use of the clamp and cautery than that which occurred in those days when hæmorrhoids were unceremoniously excised, and no precautions whatever taken to arrest hæmorrhage. These cases were operated upon by surgeons of recognized repute in this special method of treating piles. I consider that a plan of treatment which fails to compass that special end for which it was designed, and, in addition, has other obvious disadvantages besides the further objection of being somewhat difficult to understand and complex in execution, loses its position in surgery and must give place to other operations which involve less risk, give better results, and do not require any special surgical training."

Looking at this sweeping condemnation a little more closely, we find that the author with an experience of fifty cases found "the immediate risks to be greater and the failures by recurrence more numerous" than by the ligature. What immediate risks *he* found he does not state, but he had heard of cases of secondary hæmorrhage in the practice of others. What percentage of failures he had he does not state, only that the results were worse than by the ligature. If by this is meant that while he failed in two out of a dozen cases with the ligature he failed in a still greater percentage with the clamp, his results were indeed bad. How are we to compare his results with those of Allingham and Smith, who number their operations by these two methods by the thousands and never report failures? Smith never speaks of any difficulty in understanding or practicing the clamp operation or of any particular "special surgical training" as necessary for its performance. Indeed, I know of nothing much simpler than to pinch up a pile with a clamp, and, after cutting off a part, burn the stump which remains.

The author does not sufficiently particularize what "immediate risks" he found to be so great. I never have heard of any immediate risk beyond the risk attending the administration of an anæsthetic. Nor does he tell what the additional "obvious disadvantages" were. I will not, however, argue the question. The author tried it and did not meet with success, while other men have practiced it for a life-time and found it perfectly satisfactory and eminently free from all the objections which he raises.

The third proposition is this :

"I do not consider that any surgeon has a thorough conception of hæmorrhoids until he has performed the operation of excision. He may have dissected the *cadaver* any number of times with the special object of studying the structure of hæm-

orrhoids, but it is only on the living subject that dissection will reveal their true nature. It is these vivisections that have confirmed my belief in the inefficiency of the ligature and clamp, and they have revealed also the cause of failure. In surgical literature we read of hæmorrhoids as distinct individual tumors, but the vivisections I have referred to demonstrate that the entire plexus of veins surrounding the immediate interior of the gut is at fault. Without doubt the hæmorrhoidal condition is marked by special protuberances at certain points in the circumference of the gut, and these I find have a pretty uniform position, owing, no doubt, to the regular disposition of the fibrous septa. But the essential fact remains that, though possibly concealed by these masses, there are minute venous radicles behind and between the main tumors."

I interrupt the author's remarks at this point merely to call attention to the fact that he has asserted something which nobody has ever denied—the veins of the rectum anastomose. He goes on to say that these small venous radicles

"are now as small as their larger neighbors once were; but let the latter be removed by clamp or ligature, and the apparently insignificant venules will dilate and take their place, the very removal, perhaps, affording room for growth, and, whilst taking off external pressure, leaving the tension within increased. It is on the removal of these rudimentary piles that the permanence of the cure and the future welfare of the patient depend."

The calling of a "minute venous radicle" a "rudimentary pile" is, I believe, an entirely new and original pathological idea—very analogous to the assertion that the normal arch of the aorta is a rudimentary aneurysm. The whole proposition seems to me rashly stated, unfounded in fact, incapable of proof, and unsupported by the clinical experience of the greatest authorities.

In the first place, the author may argue as he will about the causes of his failures in operating by the two methods he condemns—other men who have practiced the operations longer, and are therefore greater authorities, do not fail; and with them minute venous radicles do not develop into piles after they have operated. With them the removal of three or four sections of the mucous membrane with the clamp or the ligature, and the substitution of firm cicatrices for hæmorrhoidal tumors, does not lead to the development of new hæmorrhoids by "affording room for growth," "taking off external pressure," and "leaving the tension within increased."

The question is not one for pathological discussion, or in any sense for argument; it is one of clinical fact. Does the ligature operation or that with the clamp cure, or does it not? On the negative I do not consider Whitehead's experience of twelve cases with the ligature and fifty with the clamp as any offset to the figures of Allingham and Smith. Nor do I believe that those who are practicing Whitehead's operation to-day are doing so because they have found the others to be unreliable. Both the ligature and the clamp will cure, but it is possible to imagine something better than either in certain particulars—something that will cause less pain, less confinement to the bed, less sympathetic vesical disturbance, and less danger of surgical accident. This it was hoped carbolic-acid injections would

supply, and, this hope proving unfounded, it is natural to try the next thing—excision. If this gave a more permanent cure than the older methods—which it does not—and if it were attended by less subsequent pain and a more rapid recovery—which it is not—it would very soon take their place. Otherwise it will surely give room to the next properly attested method which is brought to the notice of the profession, for, if it has no great advantage in its results, it will inevitably be carried out of practice by the inherent difficulty of its performance.

The author speaks of the clamp operation as “being somewhat difficult to understand” and as requiring “special surgical training.” Its performance by a practiced operator is a matter of seconds, not minutes. It is more rapidly done than the ligature, and both can be done in less than a minute—or could be before so much time was devoted to antiseptics. An operation such as these will not be abandoned for an elaborate dissection like Whitehead’s until the latter has been proved to be in many ways preferable, and I venture to say that this has not yet been done. Whitehead himself does not give results in sufficient detail to enable us to judge on the points necessary for a decision. He says:

“I have now operated upon more than three hundred patients without a death, a single instance of secondary hæmorrhage, or one case where any complication, such as ulceration, abscess, stricture, or incontinence of fæces, has occurred.”

This is certainly a good result, but nothing exceptional, and surely no better than can be shown by either the clamp or the ligature in other hands than his.

The points upon which the merits of the operation must rest are not that it cures and fails to kill, but the amount of pain and constitutional disturbance it causes. He says that “the patient sits up on the fourth day, and is in condition to resume work within a fortnight”; that he rarely finds much pain after the operation, and only occasionally uses the catheter. These are also good results, but not exceptional or confined to his method.

On these points Weir* has given some more accurate data from an experience of six cases.

As the cases are well and clearly reported, I take this opportunity for examining them, and through them the results of the method, rather closely.

Regarding the first, it is stated that much less pain was experienced after the operation than is often observed after the operation of ligation; that on the eighth day the line of suture was completely healed, and a week later the patient was discharged from the hospital perfectly well, with a clean and well-shaped anus, only two sutures remaining attached to the skin, and these causing no trouble.

In the second case the patient urinated voluntarily after the operation, the bowels moved without pain on the seventh day, and he was walking about on the twelfth. The stitches were removed, and he was discharged on the eighteenth day.

In the third case the patient suffered a good deal of pain after the operation, and the urine had to be drawn once;

perhaps, however, both these facts may have been attributable to the increased stretching and manipulation of an examination for a possible stricture. The bowels moved painlessly on the seventh day; on the eighth the wound was found to have united primarily, with the exception of a small area; and on the thirteenth day he was up and about.

In the fourth case there was no reaction whatever after the operation, there being no pain and the urine being passed voluntarily. The patient was sitting up in bed on the third day, and about on the sixth. The majority of the sutures were removed on the tenth day.

In the fifth case these particulars are not given; but in the sixth the patient was catheterized during the first twenty-four hours; the subsequent progress was painless, the patient was able to sit up in bed squarely on the affected part at the end of the third day, and was dressed within a week.

Weir compares these results very favorably with those of the ligature method, and, I think, with perfect justice. The recovery is quicker, and the reaction, as shown by pain and difficulty in urination, is less. But with regard to the clamp and cautery method the same certainly is not true. It is now many months since I have used the catheter after an operation for hæmorrhoids—so many that I do not know if I possess such an instrument; and a case in which the patient is not able to report at my office in a week after the operation is an unusual exception. Indeed, I have difficulty in keeping my patients under observation after the first week. I had a letter from one this morning who disappeared on the seventh day, telling me he would come and see me if I wished, but that he was all right, and this is not an unusually good result.

For exactly the reasons that Weir prefers Whitehead’s operation to the ligature I prefer the clamp to either. All three of them give the same satisfactory results in the end, but the clamp and the method by excision cure with less pain than the ligature, and the clamp operation is much simpler than that of excision, while possessing all its advantages.

HYSTERICAL BLINDNESS IN THE MALE,

WITH A REPORT OF THREE CASES.*

By WILLIAM OLIVER MOORE, M. D.,

PROFESSOR OF THE DISEASES OF THE EYE AND EAR IN THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, UNIVERSITY OF VERMONT, AND WOMAN’S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY.

HYSTERIA is a term the etymology of which is misleading, and until quite recently the disease was considered to be confined to the female sex. Those who have maintained the Hippocratic opinion that the sole source of hysteria lies in the uterus have denied the existence of the disease in the male sex. Even physicians of the present day, Landouzy, Monneret, and others, share this incredulity. On the other hand, Rosenthal says: “We must admit that moral causes which may often lead to hysteria in the female may also produce the same disease in delicately constituted members of the male sex.” Briquet, in one

* “Medical Record,” July 14, 1888.

* Read before the American Ophthalmological Society at its twenty-fourth annual meeting.

thousand cases of hysteria, found fifty in males, or one male in twenty cases. Other authors think that one in fifteen is more nearly the average. Between the years 1875 and 1885 no fewer than five theses on hysteria in the male appeared in France. In the male the symptoms last longer, and are more apt to occur in weak and effeminate, yet may occur in strong persons. Lasègue has been led to apply the term peripheral hysteria from the fact that any form of irritation in a patient predisposed to hysteria may act as an exciting cause.

For instance, a foreign body on the cornea may be sufficient to set up the full train of nervous symptoms. Of course, simulated one-sided blindness is well known in countries where every healthy man is forced to do military service, and many wish to evade it by this subterfuge.

Harlan has reported a case of a boy eleven years old, and Galezowski also.

CASE I.—J. C. B., farmer, male, aged twenty-five, married, no children, living at Long Ridge, Conn. Father and mother healthy. The third of five children. Has always been in good health until two years since, when he began to show nervous symptoms, being disposed to frequent quiet places, and be more or less morose. Was very fond of reading, especially at night. Did not smoke or drink, and had no vices.

June, 1886.—Complained of failing vision in L. E., and after two weeks stated that he could not see even light with it. Being naturally alarmed, he sought advice.

June 16th.—When first seen by the reporter both eyes were seen to look normal in external appearance, with pupils equal in size and responsive to light.

L. E., V. = 0 (according to his statement).

R. E., V. = $\frac{2}{3}$ Em.

Ophthalmoscope showed normal fundus, except in the right a slight patch of opaque nerve-fiber near the papilla. Testing with the prism and the candle gave vertical diplopia, and, as there was no error in the R. E., convinced us at once of the fact that vision was present in the L. E. Pressure on one eyeball to change the relation of the optic axes was made, and again diplopia produced, showing absolutely that vision was present and that the blindness was mental. The patient was informed that a treatment of a few days by electricity would accomplish a complete cure. A strong faradaic current was applied, one pole to the nape of the neck and the other over the eyelids closed, and the full force applied quickly and alternately so that the shock would be more felt. The treatment was a great surprise to him, and he jumped from the chair exclaiming that already there was an improvement. This strong current was again applied the same day, only in the reverse order, a very mild current at first, and then, when not expecting it, the strongest. The effect, as before, was startling and marked, and after this application, L. E., V. = $\frac{2}{3}$, much to his satisfaction.

The next day an application of the galvanic current was made to the cervical sympathetic, after which the patient declared vision perfectly restored. By test it was V. = $\frac{20}{xx}$ Em., and reading perfect. At no time was there achromatopsia. Patient returned home at the end of ten days without further treatment, and has never since had any difficulty, yet surrounded by the same influences.

CASE II.—G. F., male, aged twenty-two, single, resident of West Woodstock, Vt., student and farmer, a large, well-formed, and fine-looking patient. On the paternal side insanity is pres-

ent and one living uncle is in an asylum, although his father and mother are well and of correct nervous organization. First seen by me in May, 1888, when the following history was obtained:

Eighteen months before, having some trouble in reading, he sought the advice of a physician, thinking that he might need glasses. Atropine was used for two days and glasses were prescribed. The atropine so annoyed him that he became very excited over the mydriatic effect and consequent blurring of near objects—so much so that he thought he would become blind. From this time on he put on smoked glasses, and finally bandages, and then remained in a darkened room, going out by being led in the evening for a short walk. He would not open the lids, and declared he was blind. For ten months he kept this darkened room, and even then with shades and other coverings, so great was his fear that light would enter the eyes, it being a part of his fear that should it fall on the eye it would seriously affect the optic nerve.

At no time was there inflammation of the eye or eyelids, nor any pain. Nothing except the mental photophobia, but none actually (as I have learned from his attending physician).

When seen by me, May 15, 1888, he looked pale from the long stay in the darkened chamber, but otherwise healthy. He had what I have always noticed in hysteria—a great fondness for minute details of his condition, and spoke with that characteristic precision noticed in such nervous conditions. He was brought a distance of forty miles to see me, and had a picturesque appearance with his colored glasses, and these in turn covered by a veil and shawl.

On examination, the eyelids were found shut, but not by spasm; they could be opened, but not by the patient. The cornea were clear, conjunctivæ slightly red, pupils responsive to light. V. = 0. The appearance of the external eye was normal. Ophthalmoscopic examination under ether revealed normal fundus in each eye.

The general appearance led to the diagnosis of hysterical blindness, and a prognosis was given that in one week he would be returned home well. Canthoplasty under ether was advised and accepted.

May 17th.—Profound etherization was produced and a liberal canthoplasty performed, the lids being carefully inspected at the same time.

On recovering from the etherization, the patient opened the eyelids and looked at the surroundings, and, by asking questions, showed that he saw clearly.

When fully out of ether, he was confidently told that the seat of the disease had been discovered and removed, and that he would be well in a few days.

In brief, the case progressed most rapidly, and the second day he was walking about the grounds of the hospital without colored glasses, and returned home in a week from the operation alone, some forty miles distant. A letter received July 12th says he works daily about the farm and can read at night without fatigue. He had no sexual vices.

CASE III.—H. de B. W., male, aged fifteen, second son of nervous parents, living in the country in a farming district. Attends school and is fond of study; has a delicate appearance. Regular in his habits, special pains having been made by the reporter to ascertain if there was any sexual perversion or excitement to cause the ocular disturbance. No smoking or use of other toxic agents. Had been disappointed in not securing a prize at school, and from that time the ocular symptoms manifested themselves gradually. He showed no aversion to attending school, but lacked the enthusiasm formerly shown. One month after the disappointment he became blind in the R. E., stating that it had gradually failed until, when seen, May 7, 1885, R. E., V. = 0 (as stated by patient). L. E., V. = $\frac{2}{3}$, + 1 D.

Normal appearance of eyes and pupils.

Ophthalmoscopic picture perfect, and no limitation of the visual or color field in L. E. No loss of colors in the R. E. had been noticed. Prisms placed in position over the eyes produced diplopia, and the displacing of the optic axes by the finger produced the same result. The test with colored glasses and the test-type also proved that binocular vision was present.

Treatment suggested was the administration of ether; this was accepted, and on May 10th he was put under the anæsthetic, and, on recovering from the same, the L. E. being bandaged, he opened the R. E. and asked various questions showing the vision to be perfect; he also could read.

Being assured that the seat of the difficulty had been discovered, he manifested great pleasure, and, after treatment of hygienic character, electricity, and cold douching of the eyes, he returned home, May 28th, with V. = $\frac{2}{3}$ %, each eye, and no complaint of difficulty in using either.

He returned to school, and has never since had a similar attack.

In each of the three cases reported some shock was produced in the treatment of the case; in the first by harsh electricity, in the second by etherization and canthoplasty, and the last by the ether alone.

In all, the assurance of the discovery of the cause, in my opinion, acted as an important factor in the cure.

It is a mistake to tell these patients that they have nothing the matter and that it is simply hysteria, for they all are anxious to be cured, and do the best in their power to overcome the difficulty, but have not the requisite force. Any operation or any shock is sufficient to cure this class of cases.

My object in presenting these subjects to the attention of the society is to make more prominent the fact that hysteria is prevalent in the male, and that we should be on the alert for its detection.

The idea of using ether as a means of cure was suggested by the experience of Dr. J. H. Hutchinson, of Philadelphia, in 1864, who cured a case of hysterical deaf-mutism by the repeated use of this drug.

128 MADISON AVENUE.

OBSERVATIONS OF THE EFFECT OF RAPID CHANGES OF ALTITUDE ON A CASE OF INTERSTITIAL NEPHRITIS IN AN ADVANCED STAGE.*

By GEORGE CHISMORE, M. D.,

SAN FRANCISCO, CAL.

It is seldom that an opportunity is afforded to note the effect upon a case of interstitial nephritis, in an advanced stage, of a journey from San Francisco to New York over the Central and Union Pacific Railroads, involving, as it does, such rapid and extreme changes in altitude.

When the patient, whose case is here reported, and his friends sought my professional sanction to the proposed journey, the first question occurring to my mind was, What will be the effect of variations of atmospheric pressure, amounting to many inches daily, upon a man already suf-

fering from dyspnoea of nephritic origin? The other exigencies of travel could be, in a great measure, guarded against; this one had to be endured, and that, too, by one whose power of adjustment was inadequate to the requirements of a fixed locality. Not finding the slightest allusion to this point in the text-books or medical journals within reach, and lacking personal experience to guide me, approval was withheld. The patient then declared that, as he had been told *that his disease was fatal, go or stay*, he would assume the entire responsibility, preferring to die trying to do that which he wished, to waiting for death to come to him. Thenceforth he hastened his preparations with all the energy that had ever characterized him in his successful career as a business man, and on the appointed day was ready to start.

Mr. D. T. M., aged fifty-five, American, merchant, married, called at my office about the middle of March, 1885, to have his heart examined, as he had lately been troubled with "palpitation accompanied with shortness of breath when going up stairs or on making any unusual exertion." He had first noticed these symptoms just after his arrival in this city from New York a few weeks before.

He had been in the habit of consulting me from time to time during the previous ten years, and, although frequently making voyages to Europe and back, it was seldom that six months passed without my seeing him professionally. During this period he had never been seriously ill, but was always inclined to be nervous about himself. Thus it happened that I had examined his heart on several occasions, never finding anything beyond an irritable condition, the pulse rising from 70 up to 100 or more under nervous excitement. This was attributed to his life-long habit of drinking large quantities of very strong tea daily.

Although his appearance did not indicate a serious change, I found marked hypertrophy of the heart, without valvular lesion; the apex-beat was an inch outside the mammillary line.

It had been his custom to have his urine examined once or twice yearly, but he had omitted to do so for the past two years, as it always had been found perfectly normal. I at once asked for another examination, but he did not send me a specimen until the 2d of April. There were voided during the twenty-four hours 64 ounces of pale, limpid urine, odorless, acid; specific gravity, 1.010; albumin by bulk, $\frac{1}{4}$. It contained 1.3 per cent. of urea, amounting to 384 grains in all, and under the microscope showed large and small granular casts in abundance. Thereafter the urine was carefully observed, the result of nineteen examinations between the 5th of April and the 19th of May being as follows:

Quantity in twenty-four hours (maximum), 65 ounces; specific gravity, 1.012; urea, 406 grains. Quantity in twenty-four hours (minimum), 44 ounces; specific gravity, 1.009; urea, 120 grains. Quantity in twenty-four hours (average), 53.43 ounces; specific gravity, 1.009145; urea, 247 grains. Albumin varying from $\frac{1}{4}$ to $\frac{1}{16}$ bulk.

The progress of the disease was unusually rapid, he lost flesh and strength, and, although without pain or fever, suffered more and more from "shortness of breath." This was perhaps because he was actively engaged, not only carrying on one great mercantile concern, but also building a costly structure to contain another, in which he intended to invest a large sum. The contemplation of this last venture, which would "require five years of personal supervision to render a success," led him to demand "perfect candor" as to his "probabilities of life," and

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

on the 17th of April an unfavorable prognosis was given. This he accepted without a murmur, saying: "God's will be done," and at once set himself about settling his affairs.

He was a devout Catholic, and firmly believed that, could he live to reach the shrine of Our Lady of Lourdes, he would be made whole; hence his desire to start while he yet had strength for the journey. On the 24th of May, 1885, he set out. At that time he was still able to walk a little and to be up most of the day. He had fallen from 160 to 130 pounds in weight, was very weak, troubled during the day and tortured at night by dyspnoea, able to take food freely, although subject at intervals to fits of explosive vomiting, oedema of the feet and ankles being present to a slight extent, the urine diminishing in quantity from day to day.

A special car, supplied with everything that wealth could command to make the journey easy and comfortable, was provided. He occupied a large state-room containing a roomy and comfortable bed; registers furnished warmth when needed; an excellent cook attended to his food—in short, it is difficult to imagine in what way his transportation could have been bettered. We left San Francisco at 3 P. M., with the barometer at 30.1°, thermometer 78°. For the first five hours the route was nearly level, and the patient bore the travel well. He was in good spirits; ate a fair dinner with relish; sat up all the time; had a good movement of the bowels; and was unusually free from distress. We then began to climb the foot-hills of the Sierra Nevada Mountains, and by 10.20 P. M. had attained an elevation of 1,640 feet, bar. 28.25°, ther. 72°. Here, after a stool, he began to "feel strange," and complained of stiffness in the legs; the feet and ankles began to swell, the left the larger, the pulse ran up to 120, and the respiration became shallow and hurried.

At 1.37 A. M. we were at Blue Cañon, elevation 4,695 feet, bar. 25.3°, ther. 62°. He had slept a good part of the time, but on awakening complained of headache, thirst, and "oppression," less of the last, however, than at the same hour of the preceding night. A short delay here made him very nervous and impatient, and, indeed, he seemed to feel better at all times when the train was in motion.

From this time until 3.40 A. M., when we arrived at the Summit—7,017 feet above the level of the sea, bar. 23.15°, ther. 64°—he was very uneasy, complaining of "oppression all over," the respiration irregular, pulse varying from 108 to 120. He insisted on sitting up, but gaining no relief, went back to bed again. An hour thereafter we had dropped 1,200 feet, and by

7.40 A. M. 1,500 feet more, bar. 25.5°, ther. 70°. During this period he was seized with sharp pains radiating from the heart, his nose bled, there was great tenderness on pressure over the pericardium, and it was evident that an attack of pericarditis had been lighted up. Owing to his extreme restlessness and impatience, no record of pulse, temperature, and respiration was attempted.

From this time to the end of the first twenty-four hours' journey we ran over a table-land ranging in altitude between 3,918 and 4,330 feet above the sea-level, the barometer remaining between 25.2° and 25.8°. He suffered much from pain in the cardiac region; an endocardial murmur made its appearance, attended with fits of cyanosis; the urine during the last eighteen hours had amounted to only eight ounces, and it was pale and of a specific gravity of 1.006. The progress of the case up to the time of our leaving had been singularly free from febrile complications, but it was now clearly apparent—although, for reasons given, the temperatures were not taken—that acute inflammatory action had been added to the patient's troubles. He lost hope, and became restless, fretful, and despondent. From 3 to 10 P. M. of the 25th we passed over an easy up-grade, climbing from 4,232 feet to 5,629 feet in altitude, barometer ranging between 24.8° and 25.5°. During this time the patient mended a little.

We now ascended rapidly 556 feet to Pequop, and then, almost as quickly, dropped nearly 2,000 feet to Kelton, elevation 4,223 feet, bar. 25.5°. This was an anxious period; he was tormented by thirst, and each act of swallowing was followed by cough and spasm of the glottis; there was much cyanosis; the urine was suppressed; the pulse was rapid and weak. Pilocarpine, given hypodermically, tided him through the danger, relief coming with the perspiration. Minor variations in the grade affected him greatly; each rise made him worse, each drop gave him a little ease. The last three hours before reaching Ogden the road is nearly level, having only one sharp rise and fall of 600 feet, during which time the patient felt better, the bowels moved, and he passed a small quantity of urine.

By 3 P. M., the end of the second twenty-four hours, we had climbed steadily from Ogden (4,294 feet, bar. 25.6°) to an elevation of 7,384 feet, bar. 22.8°, then gradually descended to 6,268 feet; the legs began to swell rapidly, and, coincident with this effusion, the cardiac pain disappeared, the breathing improved, and he became more hopeful. Then there was some cyanosis, and he passed no urine. From Aspen to Laramie the road is moderately level, the greatest variation in altitude being 1,056

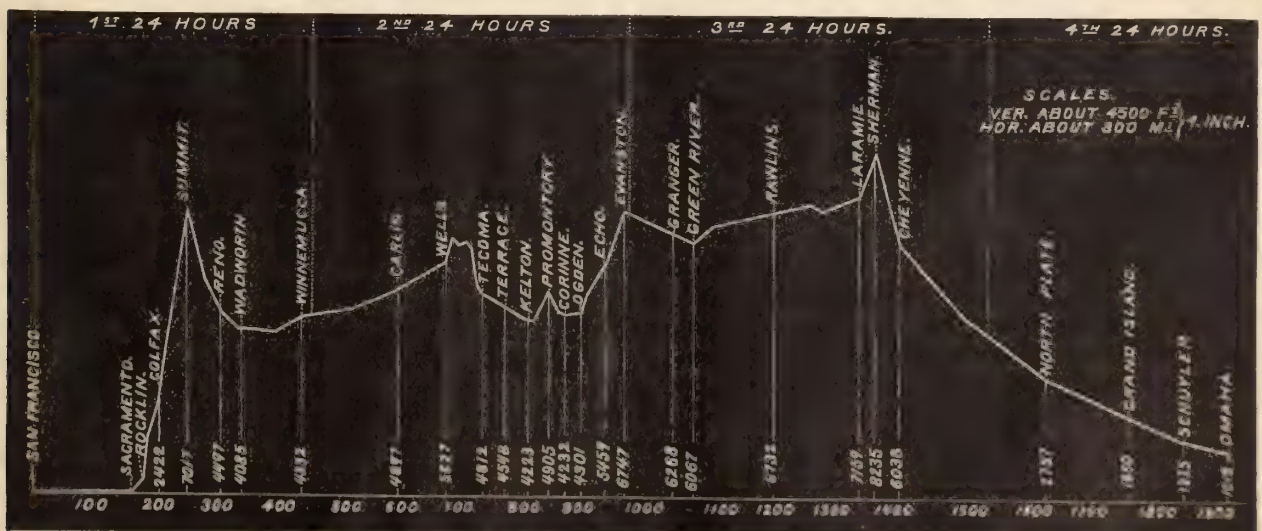


Diagram showing the principal variations in altitude between San Francisco and Omaha, over the Central and Union Pacific Railroads.

feet, and the barometer ranging between 23.55° and 22.9°. During this part of the journey there was nothing worthy of note; he slept some, took a little food, and was fairly comfortable. After leaving Laramie he became very apprehensive, dreading the final climb, saying: "I wish we were over the mountain; something always happens when we go up." Dyspnoea, attended with cyanosis, coming on, pilocarpine was given subcutaneously.

Perspiration was again followed by relief. When we reached Sherman—8,235 feet, bar. 22.12°, ther. 66°—he was quite comfortable; the bowels moved, and he passed a little water. From this point the descent, at first rapid and then gradual, is continuous. By 3 P. M. (the end of the third day's journey) we were at Big Springs, 3,195 feet above the sea, with the barometer at 26.7°, and the patient was very hopeful. "No more mountain to cross," but his stomach would not retain food, the urine was nearly suppressed, and the heart's action was very irregular.

Early in the fourth day the swelling in the feet and legs subsided, but rapid effusion into the abdomen set in, which continued throughout the day, reaching its maximum about the time we reached Omaha, at 7.30 the next morning. From there until our arrival in New York there were no marked changes to record; although he was a little better in some respects—the ascites almost disappeared, and he was in better spirits—the urine continued very scanty; the stomach was irritable, retaining but little food; and there was a gradual failing of the vital powers.

We reached New York at 5 P. M., May 30th, six days from San Francisco. He was able to walk from the car to the carriage; but, shortly after reaching his hotel, he was seized with a slight chill, followed by a sharp attack of pleurisy in the right side. Drs. Austin Flint, Sr. and Jr., and Dr. F. N. Otis met me in consultation, and the measures adopted seemed in a manner to relieve the pleurisy, but the renal condition went on from bad to worse, ending in complete suppression; the perspiration smelled strongly of urea, and crystals of the same glistened in the beard and hair. All attempts at nourishment failed, and in the evening of June 3d, after two slight convulsions, death closed the scene.

Assisted by Dr. F. N. Otis, I made an autopsy, and found a recent pericarditis in the stage of repair; a recent endocarditis also in the stage of repair; heart hypertrophied, but not dilated; from base to apex, five inches and a half; circumference, eleven inches and five eighths; wall of left ventricle, an inch and an eighth thick; aortic valves slightly roughened; mitral valves insufficient; extensive recent pleuritic adhesions of the right pleura; base of right lung partly consolidated; kidneys small, soft, covered with fat; capsule firmly adherent. Long circumference: left, seven inches and three quarters; right, seven inches and a half. Cut surfaces: cortex thin, pyramids almost obliterated.

This case is presented to you with the hope that it may lead to further observations of the effect of changes of altitude on diffuse nephritis, both in its incipient and later stages.

A number of papers have appeared within the last two years in the medical press on altitude in cardiac cases, more with reference to a prolonged sojourn in some high locality than to rapid changes of atmospheric pressure. The conclusions of the writers differ widely, some finding their patients benefited, others the reverse. In the light of my limited experience, I should strongly urge persons suffering from renal diseases of the diffuse type, with heart complications, to avoid all journeys involving great changes in elevation.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 8, 1888.

THE TREATMENT OF ABSCESS OF THE LUNG.

SURGERY is making such rapid strides nowadays that no domain of medicine is exempt from the surgeon's knife. Some surgeons are such optimists that they would not hesitate to cut down on a pulmonary tuberculous cavity and treat it as an open wound. Whether the gain from such a procedure is tantamount to the risks and trouble it would entail is certainly, as yet, an open question. But it is different with an encapsulated or circumscribed pulmonary abscess following pneumonia. Here presumably the surrounding lung tissue is healthy, and the only barrier to a restoration to health is the presence of the purulent collection. It is in such contingencies that surgery finds its proper sphere, and is attended with the most brilliant results.

Two recent articles on this subject—one by Dr. Spillmann and Dr. Haushalter in the "*Revue de médecine*," and the other by Quincke in the "*Berliner klinische Wochenschrift*"—deserve attention. The former authors have collected ten cases (including one of their own) in all but one of which pneumotomy was done. Seven of the patients were cured in a time varying from four to eight weeks after the operation, and a fistulous opening persisted in two cases only. Of the two other patients operated upon, one was benefited by the operation but died suddenly four weeks afterward; the other died in twelve days in a state of collapse. In the authors' case, after withdrawing half a drachm of pus on three successive days with an exploratory needle, on the third day they injected into the abscess cavity, without withdrawing the needle, about half a drachm of glycerin and iodoform. This set up violent cough; the expectoration almost immediately became streaked with blood and had a strong odor of iodoform. The patient died on the following day in a state of collapse.

Quincke reports two very interesting cases occurring in his own practice. They both followed attacks of pneumonia. The treatment adopted in the first case was as follows: An incision was made in one of the intercostal spaces down to the intercostal muscles. The wound thus made was packed with chloride-of-zinc paste, which was renewed every two days. At the end of twenty-five days a portion of the neighboring two ribs was resected and the wound treated in the same way with zinc paste. In about twelve days a funnel-shaped cavity was produced by the escharotic. Then for a week this cavity was cauterized every two days to the depth of an inch and a half with Paquelin's cautery. At the end of this period the abscess cavity was opened and exit given to the pus. No washings of the cavity were carried out. From the moment the pus was given exit, improvement began and progressed steadily, so that

in a few months the patient was restored to his usual health. In the second case the same course was pursued, but, although all the physical and constitutional signs of an abscess obtained, pus was not reached. The patient, however, began to improve after the resection of a rib and the production of a funnel-shaped cavity with the zinc paste. He made a good recovery, which the author attributes to the treatment. Quinke lays great stress upon the necessity of producing inflammatory adhesion between the two layers of the pleura before making an attempt to open the pulmonary abscess. Whether this desideratum may be obtained by other means more rapidly than with zinc paste, which takes from four to five weeks, he thinks will have to be decided by future experiments.

The author speaks hopefully of this form of treatment in cases of pulmonary tubercular abscesses. Of course the cases will require to be selected. They would need to occur in persons who otherwise were enjoying fair health, in whom the abscess cavity had formed slowly, and in whom the surrounding lung tissue was comparatively healthy. Abscesses situated at the apex would be most unfavorable, from the difficulty of obtaining retraction of the chest wall at this point, and from the small amount of surrounding lung tissue.

We think that the author overestimates the dangers of cutting through the non-adherent pleura in order to reach a pulmonary abscess. No one will deny that an adhesion of the two layers of the pleura is very much to be desired, but it seems to us that to wait for the production of such an adhesion four or five weeks in a case attended with hectic symptoms and expectoration of foetid purulent sputa is bad practice and diminishes the chances of restoring the patient to health. The features of a case that has recently been related to us are instructive in this connection. It occurred in the practice of one of the most eminent consultants in New York. A diagnosis of empyema was made and resection of a rib was done at a site where a previous puncture with a needle had shown the presence of pus. On cutting through the pleura, instead of pus, blood escaped. The wound was filled with antiseptic gauze. The needle was passed at another point and pus withdrawn; the rib was resected, and the same thing occurred. A third time the needle was passed and showed pus; a third rib was resected, and this time the abscess within the pulmonary tissue was reached. It was evacuated and the patient made a good recovery. On the first and second occasions the needle had penetrated the pulmonary tissue before reaching the purulent collection.

MEDICAL SUPERSTITIONS.

A CERTAIN M. Challamel has written a book entitled "*La France à vol d'oiseau au moyen âge*," in which, as we learn from some extracts given in the "*Union médicale*," he tells of a number of medical superstitions current in France in the middle ages, most of which are said to prevail at the present time also. In those days the French seem to have had unlimited faith in preservatives against diseases and in infallible means of cure, and it may be added that they were not alone in

their trustfulness. The following are some of the superstitious practices mentioned:

To cure fever, they abstained from both flesh and eggs on Easter and on other high festivals; they caused a cabbage stolen for the purpose from a neighboring garden to be dried on a pot-hook; they wore one of a dead man's bones as an amulet; they inclosed a green frog in a bag, and hung it to the sick person's neck; they ate the first Easter daisy that they found; and they received the benediction in three different parishes on the same Sunday. While telling their beads, they searched for a mullein-stalk and threw it to the winds; they passed through the cleft of a tree; they caused a horse to drink a bucketful of water, and then drank after him; they crossed a procession between the cross and the banner; they drank holy water on Easter Eve or on the eve of Pentecost; they twined the hems of a shroud about their arms or neck; and they drank three times of a mixture of water from three wells in a new pot. The people of Provence had their fisheries blest on a certain saint's day. On Assumption Day the people of Périgord went before sunrise, walking backward, to gather nine sprigs of centaury, which they fastened to a feverish person's neck, after which they gave him an infusion of the herb to drink. A toad choked to death on the eve of St. John's Day had the same virtue. It was common for a feverish patient to rise early in the morning and walk backward in a meadow, plucking a handful of herbs without turning or looking at them, then throw them behind him and keep on in his course without turning back; the result of this was that the fever attacked the devil. Another practice was for the fevered person to drop a piece of money in a public place, with some mumery; whoever picked up the coin took the fever. The waters of several fountains cured fevers, and in particular the fountain of Krignac triumphed over tertians.

To overcome fear, one had only to stick pins into a dead man's shoe, carry a wolf's tooth or eye about, or ride a bear. To banish rheumatism, the sick person caused a miller or his wife to strike three blows with the hammer, saying: *In nomine Patris*, etc. Bathing the painful parts with the water of the fountain of Moniès caused the pain to cease. In Landes, rheumatics and paralytics were cured of their ills by getting into certain openings, called *étrines*, in the pillars of a church. In Brittany a child was protected against all diseases by having its shirt put on damp. The people of Périgord carefully preserved the ashes and embers of the Yule-log, which cured the maladies of both man and beast. In some districts the butter made in May was kept as a vulnerary. Among the peasants of the Montagne-Noire a white-handled knife was an infallible remedy for colic. Epilepsy was cured by attaching a crucifix nail to the patient's arm or by causing him to wear a silver ring or a medal bearing the names Gaspar, Melchior, and Balthazar. For warts there was a very simple specific—rubbing them with a wad of hair or of broom, and wrapping chick-peas or pebbles in a rag, which the person was to throw behind him on a road. Whoever had toothache touched the aching tooth with a dead person's tooth, drove a nail into a

wall, or asked alms three times in the name of St. Lawrence, and the pain disappeared; sometimes the sound of church bells had the same effect.

The remedy for bleeding from the nose was to allow the blood to trickle on to straw fashioned into a cross, or to apply a tubular key to the back. By running up and down in a church pleurisy was escaped. Sore throat was prevented by fastening a twig of the plum-tree in the fire-place or by touching the pit of the stomach with a plow-share; for the same purpose, it was the custom in Provence to bless bread, salt, and *raisiné* (a preserve made of grapes and pears) on the third day of February, which was a saint's day. By rolling entirely naked in a field of oats, plucking a handful of oat-heads and leaving them to dry on a hedge, one was made proof against the itch. Spitting into a live frog's mouth was a cure for cough. The sweet biscuits of Saint-Denis were a remedy for rabies. Whoever plunged his hands into a dung-heap on the first day of May had nothing to fear from chilblains. Whoever jumped into the queen's fountain, on the mountain of Candiel, was cured of leprosy. Boils were exorcised by blowing into the patient's mouth, fasting, three times in succession daily for nine days. Diseases of the ear were removed by touching the ear with a skeleton's hand. Headache was subdued by binding the temples with a hangman's rope.

These are only a few of the superstitious practices of a by-gone time in France. Many of them still survive there and in other countries, humiliating signs of the credulity of man. But they are little if at all more ridiculous than the remedial measures formerly in vogue with the medical profession itself, as may be gathered from almost any old book on pharmacology.

MINOR PARAGRAPHS.

A PROPOSED NEW SOURCE OF WATER SUPPLY FOR NEW YORK.

On the 30th of November Mr. John R. Bartlett, speaking for himself and for his corporate associates, submitted to the Commissioners of the Sinking Fund a formal proposition to furnish an additional supply of water to the city of New York. Some weeks ago, as our readers are aware, Mr. Bartlett presented an outline of his plan at a meeting of the Medical Society of the County of New York, an eminently proper procedure, since the question is not alone one of protecting the "dry-goods district," but also relates to public hygiene so closely as to make the proposition a fit one for the medical profession to consider. It is understood that the territory from which the company intends to collect its water lies partly in the State of New York west of the Hudson River and partly in the adjacent portion of New Jersey, and that the plan is to build an aqueduct to Jersey City, and thence to convey the water to the lower part of New York through a tunnel under the Hudson River. So far as our information goes, no fault can be found with the salubrity of the proposed source of supply, and a company under such competent management as Mr. Bartlett's may well be trusted to surmount whatever difficulties may be supposed to attach to the work of constructing the tunnel. This enterprise is not to be looked upon as in any way a rival to the new works now in course of construction in Westchester County, but as supplementary to the Croton source of supply.

We think the city would find it highly advantageous to arrange with the Bartlett company, and we see no reasonable objection to such a course.

THE MENTAL CHARACTERISTICS OF THE SEXES.

DR. J. T. SEARCY, of Tuscaloosa, Alabama, the president of the Board of Trustees of the Alabama Insane Asylum, has written a highly philosophical and most instructive article on this subject, which appears in the October number of the "Alienist and Neurologist." By means of quotations from excellent observers and of expressions of his own, the author gives a strikingly faithful portrayal of the differences between men and women, especially those of an intellectual and those of an emotional sort. The reason for their divergence—and at the same time for the greater differences between individual men than between individual women—lies in the fact that woman is the gestative animal, and, being hampered by the necessities of gestation, suckling, and the rearing of children, has fewer opportunities than man of coming in contact with surroundings that are calculated from their novelty to give rise to new modes of thought. The life of a good woman is in conformity to a pattern handed down to her or conventionalized by others of her kind; fidelity is her virtue. A man's life is largely made by himself, accordingly as he reacts to varying external circumstances; his virtue consists in wisely shaping his course amid unforeseen agencies. Each is best fitted for his or her sphere, and the differences between them are not to be accounted for by woman's subjection to man.

A POINT IN EXPERIMENTS WITH HYPNOTICS.

In an article published in the "Berliner klinische Wochenschrift," Dr. O. Rosenbach offers the self-evident proposition that, in testing hypnotics, the experimenter should eliminate the psychical source of error incident to the patient's knowledge that he is taking a drug expected to produce sleep. Rosenbach's method of procedure, as given in a summary of his article in the "Centralblatt für klinische Medizin," is either to give the dose without letting the patient know what action is expected of it, and indeed at different times of the day, or else to experiment only on "reliable" persons, alternately giving the hypnotic and some inert substance. Manifestly the plan first mentioned is on all accounts the better one of the two.

ANATOMICAL INJECTION OF THE VEINS.

ACCORDING to the "Revue de chirurgie," M. Lejars lately presented before the *Académie de médecine* two very elegant anatomical preparations that he had made by a new and highly ingenious process of injecting the veins. After having injected the arteries, capillaries, and veins by Bouveret's method, using an ordinary injection colored with alkanet-root, he throws a second injection into the arteries. This second injection is colored with an insoluble substance in suspension, incapable of passing the capillaries. Thus different colors are given to the arteries and the veins. The entire preparation should be kept in a warm bath during the process, in order that the injection may not become solidified in its passage through the capillaries.

SOME OF THE PROPERTIES OF MILK.

At a recent meeting of the *Académie des sciences*, a report of which we find in the "Gazette hebdomadaire de médecine et de chirurgie," M. Béchamp considered the following questions: Are the globules of milk free fatty bodies similar to or identical with the globules of an emulsified fat, or are they naturally pro-

vided with an envelope that prevents their agglomeration? On either supposition, does the liquid part contain only one albuminoid, casein, or are different albuminoids contained in different milks? Does milk coagulate and ferment spontaneously—*i. e.*, naturally—or is the phenomenon accidental and dependent on the access of foreign ferments? To the first of these questions M. Béchamp answered that milk was not an emulsion; that the milk-globules were not bare globules of fat, but true free adipose cells. To the second question he replied that cow's milk contained, besides casein, other albuminoid bodies, not free, but dissolved in combination with alkalies; human milk, properly speaking, was not a casein milk, but contained zymase peculiar to itself. As to the third question, he had long since shown that milk coagulated spontaneously without the intervention of vibrios properly so called.

THE ACCIDENTAL INTRAVENOUS INJECTION OF MORPHINE.

THE accident of puncturing a vein and throwing an injection intended to be subcutaneous directly into the circulation is one that has occurred at times and has sometimes given rise to grave results. This was true in a case where a third of a grain of tartrate of morphine was used, reported by Mr. J. Craig Balfour in the "Lancet" for November 10th. The important point in Mr. Balfour's communication lies in a test which he gives of the occurrence of penetration of a vein—one that we do not remember to have seen stated before. It consists in the instantaneous supervention of a prickling sensation in all parts of the patient's surface. Bearing this in mind, one may avoid giving a dangerous dose by injecting very slowly and withdrawing the needle on the appearance of the sensation mentioned.

SYMPATHETIC VOMITING.

A WRITER in the "Union médicale" comments upon the credulity of a gentleman who lately reported at a meeting of the Obstetrical Society of Philadelphia a case in which a husband suffered with morning sickness on the occurrence of pregnancy in his wife. The writer in question even doubts if such a communication was really made to the society, and adds that, if it was, it behooves those who record everything sent from abroad to reflect. To this we have to add that it behooves the French writer to make himself somewhat more familiar with the literature of the subject, in which he will find ample evidence that sympathetic vomiting is a recognized occurrence, however inexplicable it may seem.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 4, 1888:

DISEASES.	Week ending Nov. 27		Week ending Dec. 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	15	5	18	4
Scarlet fever.....	148	28	171	28
Cerebro-spinal meningitis....	2	0	1	2
Measles.....	263	8	295	13
Diphtheria.....	121	41	111	26
Small-pox.....	1	0	1	0

The New York Academy of Medicine.—At the next meeting of the Section in Neurology, on Friday evening, the 14th inst., Dr. J. A. Weeks will report "A Rare Case of Hemianopsia with Associated Symptoms," Dr. Frederick Peterson will read "Extracts from the Autobiography of a Paranoiac, edited

with a Commentary," and Dr. E. D. Fisher will show some water color sketches, etc., made by a paranoiac.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 17th inst., Dr. Neil J. Hepburn will present "Notes on Muscular Asthenopia."

The University of Pennsylvania.—It is announced that Dr. D. Hayes Agnew has resigned from the chair of surgery, and that he is to be succeeded by Dr. John Ashhurst, Jr.

The Medico-legal Society.—At the annual meeting, to be held at the Fifth Avenue Hotel on Wednesday evening, the 12th inst., Mr. H. Guy Carleton will read a paper on "Death by Electricity in Capital Cases," Mr. John H. Wigmore will read a paper (a prize-essay) on "Circumstantial Evidence in Poisoning Trials," and a committee report on "The Best Method of Executing the Law Punishing Criminals in Capital Cases by Electricity" will come up for discussion. After the meeting the annual banquet will be given at the Palette Club.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 25 to December 1, 1888:*

McCLELLAN, ELY, Major and Surgeon, having reported to the Division Commander, on the 23d instant, as required in Par. 15, S. O. No. 261, current series, A. G. O., is assigned to duty as Attending Surgeon at these headquarters and as examiner of recruits at Chicago, Ill., from that date. Headquarters Division of the Missouri, Chicago, Ill., November 24, 1888.

CRONKHITE, HENRY M., Major and Surgeon, by direction of the Secretary of War, is granted leave of absence for two months, to take effect upon his being relieved from court-martial duty at Little Rock Barracks, Arkansas. Par. 7, S. O. 276, A. G. O., Washington, November 26, 1888.

HOFF, JOHN VAN R., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 134, November 1, 1888, Department of the Missouri, is extended one month. Par. 3, S. O. 274, A. G. O., Washington, November 23, 1888.

MOSELEY, EDWARD B., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 67, November 12, 1888, Division of the Pacific, is extended three months. Par. 13, S. O. 275, A. G. O., November 24, 1888.

CARTER, WILLIAM F., Captain and Assistant Surgeon, is granted leave of absence for one month. Par. 4, S. O. 116, Headquarters Department of Texas, San Antonio, November 12, 1888.

CLENDENIN, PAUL, First Lieutenant and Assistant Surgeon, is granted leave of absence for fifteen days, to take effect December 4, 1888. Par. 3, S. O. 116, Headquarters Department of Texas, San Antonio, November 12, 1888.

BENHAM, ROBERT B., Captain and Assistant Surgeon, Fort Laramie, Wyoming, is hereby granted leave of absence for one month. Par. 1, S. O. 111, Headquarters Department of the Platte, November 24, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 1, 1888:*

GAINES, J. H., Surgeon. Detached from the Dolphin and ordered home.

ANDERSON, FRANK, Passed Assistant Surgeon. Detached from the Pensacola and ordered to the Dolphin.

JONES, WILLIAM H., Surgeon. Detached from the Richmond and ordered to the Pensacola.

RUSSELL, A. C. H., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the Wabash.
 DRAKE, N. H., Passed Assistant Surgeon. Detached from the St. Mary's and ordered to the Coast Survey.
 WHITAKER, H. W., Passed Assistant Surgeon. Ordered to the Nautical Schoolship St. Mary's.
 LEWIS, D. O., Passed Assistant Surgeon. Detached from the Coast Survey and ordered to the Naval Academy.
 WENTWORTH, A. R., Assistant Surgeon. Ordered for examination preliminary to promotion.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the five weeks ending November 24, 1888:*

WYMAN, WALTER, Surgeon, from New York to Washington, D. C. November 16, 1888.
 LONG, W. H., Surgeon, from Detroit, Mich., to Cincinnati, Ohio. November 16, 1888.
 FEESSENDEN, C. S. D., Surgeon, from Norfolk, Va., to Louisville, Ky. November 16, 1888.
 PURVIANCE, GEORGE, Surgeon, from Cincinnati, Ohio, to Baltimore, Md. November 16, 1888.
 AUSTIN, H. W., Surgeon, from Chicago, Ill., to Milwaukee, Wis. November 17, 1888.
 GODFREY, JOHN, Surgeon, from Louisville, Ky., to Milwaukee, Wis. November 14, 1888.
 GODFREY, JOHN, Surgeon, from Louisville, Ky., to New York. November 16, 1888.
 MEAD, F. W., Passed Assistant Surgeon, from Baltimore, Md., to Norfolk, Va. November 16, 1888.
 GUITÉRAS, JOHN, Passed Assistant Surgeon, from Camp Perry, Fla., to Charleston, S. C. November 15, 1888.
 DEVAN, S. C., Passed Assistant Surgeon, from Savannah, Ga., to Washington, D. C. November 15, 1888.
 URQUHART, F. M., Passed Assistant Surgeon, from Live Oak, Fla., to Dupont, Ga. November 3, 1888.
 BROOKS, S. D., Passed Assistant Surgeon, from Wilmington, N. C., to Savannah, Ga. November 15, 1888.
 STONER, J. B., Assistant Surgeon, from Charleston, S. C., to Wilmington, N. C. November 15, 1888.

Leaves of Absence.

BAILHACHE, P. H., Surgeon, twenty days. November 24, 1888.
 LONG, W. H., Surgeon, sixteen days. November 21, 1888.
 MCINTOSH, W. P., Assistant Surgeon, thirty days. October 24, 1888.
 MAGRUDER, G. M., Assistant Surgeon, thirty days. November 23, 1888.
 COBB, J. O., Assistant Surgeon, twenty days. November 20, 1888.
 GEDDINGS, H. D., Assistant Surgeon, thirty days. November 1, 1888.
 WYMAN, WALTER, Surgeon, AUSTIN, H. W., Surgeon, and GODFREY, JOHN, Surgeon, detailed as representatives at the meeting of the American Public Health Association.

Promotion.

MCINTOSH, W. P., promoted and appointed Passed Assistant Surgeon. November 21, 1888.

Society Meetings for the Coming Week:

MONDAY, December 10th: New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technolo-

gy); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, December 11th: New York Medical Union (private); Medical Societies of the Counties of Chemung (quarterly—Elmira), Oswego (semi-annual—Oswego), Rensselaer, and Ulster (quarterly), N. Y.; Morris, N. J., County Medical Society (semi-annual); Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

WEDNESDAY, December 12th: New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society (annual); Medical Societies of the Counties of Albany, Cayuga (semi-annual), Cortland (semi-annual), and Montgomery (quarterly), N. Y.; Strafford, N. H., District Medical Society (annual—Dover); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

THURSDAY, December 13th: Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Laryngological Society (annual); Addison, Vt., County Medical Society (annual); Pathological Society of Philadelphia.

FRIDAY, December 14th: New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

SATURDAY, December 15th: Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

R. H. Sabin, M. D., of West Troy, a graduate from the Albany Medical College in the class of 1856, died on Tuesday, the 4th inst. He was a member of the Medical Society of the County of Albany and of the New York State Medical Association.

Giovanni Ceccarini, M. D., formerly a practitioner of medicine in New York, died on Monday, the 3d inst., at Riccione, Italy.

Letters to the Editor.

HARRISON'S OPERATION FOR PROSTATIC ENLARGEMENT.

80 HANSON PLACE, BROOKLYN, November 7, 1888.

To the Editor of the New York Medical Journal:

SIR: I wish to add my testimony to the efficiency of the operation of Mr. Harrison, of London, as described by him at Bellevue Hospital, and reported in the Journal of October 6, 1888, for the cure of prostatic disease or enlargement.

On October 24, 1888, I performed that operation on a man, aged seventy-nine years, who had been badly afflicted for ten years, and had been unable to pass his urine without the aid of a catheter for more than three years. A false passage had been formed, and that caused him or his attendants much trouble in introducing a catheter, so that it was attended with more or less bleeding at each attempt until he was almost exsanguinated. I operated as above stated, and he is now doing well. He passes urine readily, and the wound is already nearly healed. I do not know of the operation having been performed in this country previously, unless the case reported in the Journal of September 29, 1888, by Dr. Abner Post, of Boston, was the same opera-

tion. The relief afforded the old gentleman in my case is truly gratifying, and I believe this is destined to become the treatment in such cases.

J. A. FREEMAN.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Third Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.

The President, Dr. W. H. DRAPER, of New York, in the Chair.

(Concluded from page 472.)

Disturbances of the Heart-rhythm with reference to their Causation and their Value in Diagnosis.—Dr. G. BAUMGARTEN, of St. Louis, in a paper with this title, remarked that disturbances of heart-rhythm were not taken into account in the diagnosis and prognosis of heart difficulties so much as they should be. In studying them we observed not only their character, but the other conjoined elements of impaired circulation. He had found it convenient to group alterations of rhythm, according to their form, under three heads: 1. Fluctuations in rhythm, easily changing the cephalic pulse, as seen in compression of the brain after the initial slowing, and due to a paralysis of the vagus nerve. 2. Variation in frequency, as well as in amplitude, being a change in the strength of cardiac action due to inspiration. It was caused by pressure on the aorta due to inspiration, and did not affect the rhythm. It was seen in the exaggerated respiratory efforts of such a disease as asthma. The *pulsus paradoxus* in children was not really an intermittent pulse. It was due to full respirations taken in deep sleep sometimes, as well as to the respiratory efforts in croup, etc. 3. An intermittent or a double beat; a loss of proper systolic motion, the beat being unnaturally prolonged; the frequent omission of several beats; a state in which the beats were weak and strong in alternation; the very irregular or crazy pulse; and, finally, irregularities giving a resemblance to dactylic and other rhythms. He had found that some very slow pulses were really due to disturbances of rhythm, and not to a rarity. Such were really changed from another sort of rhythm; thus a pulse beating with an irregular fullness of an exaggerated sort might suddenly pass into a very infrequent pulse. The transition took place on a slight provocation—such as the application of cold and heat, the taking of food, or a mental disturbance. Tobacco, coffee, and tea produced many of these cases. The heart-rhythm and the accompanying pulse should be studied together. It was impossible to say what element in the heart was at fault, whether muscles, nerves, or ganglia. It was better to treat the whole organ as a unit. Weakness was at the root of most of these troubles of altered rhythm. In some cases the center in the medulla was the seat of the disorder; in others, disorders of the stomach, liver, or kidney caused it by a reflex irritation; in a third class it might be purely a neurosis due to degenerations in the cardiac ganglia. But tea, coffee, and tobacco were leading causes. Most of the changes in rhythm were the results of incompetency in the heart, and thus became of great importance in prognosis. The arrhythmia of such a heart increased by exercise, but often ceased if the patient lay down. Among the causes and conditions leading to disturbed rhythm the speaker mentioned malnutrition of the cardiac wall, dilatation, and exhaustion from overexertion, mitral insufficiency, chronic and acute myocarditis, sclerosis, and atheroma.

He concluded that any permanent irregularity meant organic change, but that one which could be produced by exertion or excitement and ceased with rest meant loss of innervation, while a paroxysmal arrhythmia pointed to the nervous system.

Dr. E. T. BRUN, of Philadelphia, spoke of the frequency with which fibroid change in the heart produced a very slow pulse.

Dr. R. T. EDES, of Washington, spoke of an intermittent beat as often of value in the diagnosis of pericarditis.

Dr. WILLIAM OSLER, of Philadelphia, mentioned cases where great irregularity had existed for years without interfering with comfort and good health.

Dr. H. M. LYMAN, of Chicago, remarked that many cases of arrhythmia were due to disturbances of the excretory functions. They also occurred in overworked persons in fair health suffering from a little gastro-intestinal catarrh due to liver disorder. The heart-action was here a barometer of the hepatic state. The treatment in such cases was best directed to the kidney, liver, and intestines. These patients suffered much from pains in the eyes, neck, shoulder, and heart.

The PRESIDENT gave instances where a sudden emotional shock had given rise to cardiac arrhythmia of years' duration. In some cases, where the pulse had been as slow as 20 and 10 to the minute, calcification of the coronary arteries had been found. Disturbed rhythm, with otherwise good health, he compared to instances where headache persisted in occurring at short intervals for a life-time without loss of general health. Arrhythmia sometimes accompanied albuminuria and angina.

The Treatment of Valvular Affections of the Heart.—

Dr. J. M. DACOSTA, of Philadelphia, read a paper with this title in which he showed that not a study of the valvular conditions, but a clinical observation of the effects of various medicines, was at the root of the matter in successful treatment. When compensation was good no drugs were to be given. If the heart was overforceful, sedatives were of value, and when the heart action tended to fail, small doses of digitalis might prolong life for years. The same valvular affection in different cases called for different treatment. He had seen cases in which aconite gave marked relief where digitalis could not be endured at all and made the condition worse.

As for dosage, he had usually found the best effects from digitalis when given in ten-drop doses twice a day; but some patients did better on ten drops of the tincture once a day; and a few did best on five drops every four to six hours. If the stomach became deranged the drug might be given by suppository. Where there was dilatation of the heart, much larger doses were needed, and it was well to alternate with alcohol and strychnine. When compensation failed, the pulse became rapid and compressible, and cedema appeared, large doses of digitalis, such as fifteen minims of the tincture every hour, were needed, aided by ammonia and brandy. In aortic regurgitation, digitalis was useful if the heart-fiber was sound; but if it was degenerated, arsenic and strychnine gave better results. There were cases of aortic narrowing or regurgitation where compensation was complete, and here no uneasiness was felt. In such cases the patient merely needed to be warned not to undergo sudden strain and to lead a temperate life. Disturbances in regularity and rhythm scarcely called for medical treatment, although some cases of excessive irregularity were improved by belladonna. In dilated heart we had a condition where we wished to strengthen the heart so as to overcome passive venous stasis, and yet, if possible, without causing contraction of the arterioles and capillaries, which so increased the strain on the heart. Thus far we had found no one drug which would do this. It might in the future be accomplished by some combination. The cause and duration of a heart condition must be taken into account when treatment

was considered; thus, three months having elapsed after the development of heart trouble with acute rheumatism, no cure was possible; iodides utterly failed. We should guard against a recurrence of the latter disease. The heart troubles coming on with age had no remedy. When there was decay or fatty degeneration of the heart, acids were of but slight aid; we had no remedy and the strongest stimulants were needed. But in functional disorders much could be done. Rest, graduated exercises, good diet, and cardiac stimulants in small doses were indicated. Great attention was to be paid to everything bearing on the general health, so that the heart should be nourished with good blood; but iron was not of use; it produced constipation, fullness about the heart, headache, and a deranged stomach. Good food was better than iron; coffee and tea in small amounts were not harmful; neither were alcoholic drinks in small quantities if no gouty tendency was present. Light wines, except champagne, were allowable. He advocated gentle exercise and complete repose where there was a violent heart action. Cheerfulness was important; nervous people were apt to do badly, worry being equivalent to a short life in its meaning.

Palpitation had an appearance of strength about it which was fictitious. It really meant a state of weakness and needed ammonia and brandy. It was made worse by fatigue, opium, cannabis indica, or bromides. Nitroglycerin was often valuable where not too disagreeable to take. Speaking of the secondary results, diminution of the urine and its high specific gravity, and many urates without albumin, accompanied by headache and dyspnoea, was a state often relieved by diuretics, caffeine and benzoate of sodium being recommended. Dyspepsia was very common both with and without engorgement of the vessels. In the latter case purgatives and minute doses of calomel were of use.

As to the new drugs, he had found none equal to digitalis. They were of value when the latter could not be longer continued. Strophanthus, caffeine, and adonidine were discussed. Cocaine had a slight value; also chloride of barium was a general as well as a cardiac tonic and easy on the stomach, one tenth of a grain in pill three or four times a day being the best dose to use. The author advised that a regular periodical examination be made of all persons having heart disorders, even if they felt well, in order that further changes might be met when they began and life be thus prolonged.

Dr. F. C. SHATTUCK, of Boston, remarked that Frazer, of Edinburgh, had alleged for strophanthus that very merit which Dr. DaCosta thought belonged to no known drug—of not closing the small arteries. In regard to violent exercise taken by men with enlarged hearts, he had known a case where the patient was accustomed to swim long distances under water, had an enormous enlargement, and felt no distress or dyspnoea.

Dr. S. C. CHEW, of Baltimore, speaking of the value of strophanthus, had seen the results alleged for it by Dr. Frazer, but only, to any marked degree, from a sample of the drug which he had obtained from Dr. Frazer himself.

The Absolute and Relative Value of the Presence of Albumin and Casts and of Renal Inadequacy in the Diagnosis and Prognosis of Diseases of the Kidney.—Dr. ROBERT T. EDES, of Washington, read a paper with this title which opened with the remark that many could remember a time when the presence of albumin in a man's urine was thought a sure sign of approaching death, and that the idea had been more or less an accepted one until quite lately. As to the finding of albumin in the urine of perfectly healthy persons, this had occurred in a large percentage of investigations made by many observers; at least it had been found in traces. It was often present in minute amounts, such as from one fortieth to one tenth per cent.

as shown by the finer tests, when no flocculent precipitate was obtainable by heat. Mucin might be the source of these small quantities of albumin.

Passing over the albuminuria of youth, that due to diet and cyclical albuminuria, there were other cases where it was present in conditions of apparent health. Some of these were really cases of nephritis. By care and waiting, casts might sometimes be found in addition.

Overweighted men and those immersed in business often had such a masked interstitial nephritis. Much patience was needed with often a great many trials to find casts—trying a number of slides with the same sample, getting samples of both the morning and evening urine and that before and after meals, as well as on different days of many successive days. Casts might be of the exudative sort, either hyaline or granular; in other cases they were composed of pus, epithelial cells, fat, or mucin. Epithelial casts did certainly point to some change in the kidney tissue. The long, large, straight casts, looking like fine white threads, were made of degenerated epithelial cells. Fatty casts and fat globules might come from the food as well as from fatty degenerations in the renal epithelium. Waxy casts indicated a high degree of degeneration from which recovery was not to be hoped for.

Castes were not always found with albumin, not at least without many and careful examinations. For this reason the negative statements so commonly made by physicians that no casts were found were, as a rule, not to be relied upon. Hyaline casts were of minor importance. Occurring in slight amount, they did not indicate a dangerous condition; and anything which had happened with the patient at the time they were found must not be taken as a cause producing these casts.

The reader proposed, as a definition of renal inadequacy, impaired work and lessened production on the part of the kidney. A great decrease in the amount of the urine deserved inquiry and further examination, but not slight degrees of deficiency. It might be asked if we could diagnose the beginning of nephritis by a slight lessening in the amount of urine produced? He would answer that it could be made out more easily by other signs, for deficiency of urine from renal inadequacy was hard to establish; the diet, the water drunk, the amount of water thrown off by the skin, all had so direct a bearing on the amount of urine secreted.

Polyuria, together with a low specific gravity, was of some importance, as it often went with commencing albuminuria. The standard normal output per diem was between a little less than an ounce of solid constituents to an ounce and a quarter, varying with the food, race, and habits; but two thirds of an ounce was well within the limits of health. Dr. Noyes had given a good series of experiments in the "Am. Journal of the Med. Sciences," showing what vast changes could be produced by alterations in the character and amount of the food, by the taking of coffee, and by abundant or deficient sleep. A considerable amount of nephritis did not prevent the kidney from discharging, by its portions not yet damaged, adequate urine, both in amount and in contained solids. The capacity of the kidney cells for their functional work was so elastic, anyhow, to meet the variations in diet, that the normal production of urine could go on even till shortly before death when a part, and even a large part, of the kidney was damaged. Therefore, when changes in the amount of solids or fluids occurred, something else must be at fault. Of course, only the daily total of urea was of any value, and should in all cases be obtained, together with the daily total of uric acid and phosphates.

The great and important cause of lessened urine was a lessening of nitrogenous metabolism in the whole body, especially as a result secondary of bad digestion and nervous disturbances.

The term renal inadequacy, however, meant that the kidney was unable to produce enough urine. Given a patient who was anæmic, and whose urine was pale, free from casts or uric acid, and of low specific gravity—should we assume that he had a withered or cirrhotic kidney? We could not, for, if so, albumin and casts could certainly be found. We should remember that extra supplies of food and wine given to a person who overate would at once increase his output of urea, and, by attention to digestion, nutrition, and dietary of such a patient, try to bring about a better metamorphosis of food.

The author believed that the old heat-and-nitric-acid test was the useful one; that the albuminuria of adolescents meant that something was wrong, although the condition was not permanent, and might be accompanied by a few casts; and that if the amount of urine was to be of aid in the diagnosis, we must estimate what reduction in total amount occurred during a long period of time.

Dr. E. G. JANEWAY, of New York, read a paper on the same subject and reaching the same conclusions in many respects. He spoke of the various cases where albumin had no serious import, and concluded that even casts in small numbers were not proof of kidney disease. Ill-fed and ill-conditioned children often had casts without kidney lesion; digestive disturbances and heart disorders producing congested kidneys led to their formation in other instances. Inflammations of the urinary passages due to gonorrhœa, diabetes, or cystitis, might mislead by showing albumin present in the urine. Intermittent hæmaturia easily deceived one in this way; also nervous disturbances, affecting the glomeruli temporarily perhaps; and lead-poisoning might lead to the same false deduction from the presence of albumin. In real nephritis, on the other hand, albumin might be nearly or altogether absent, even just before death. Often nervous people were really sufferers from kidney diseases and yet never lost albumin. A small quantity of daily urine with low specific gravity, continuing a long time, was important as a sign of kidney disease.

Hyaline casts might only be a sign of cerebral disturbance. They were produced sometimes by violent exercise followed by an alcohol sponge. Mucous casts resulted from the irritation of urine of high specific gravity. However, the absence of casts, even of mucous casts, did not disprove the existence of nephritis. Richly epithelial and waxy casts were more significant of diseased kidneys. Fatty casts or globules in small amount were not proof of disease; large numbers of them pointed to degeneration of the kidney structures.

Granular casts were apt to mislead, since they might result from aggregations of excreted matters in the tubules, or come from the vagina, or be composed of fine crystals of uric acid. The number of casts, whether small or great, present on a single occasion, must not be given too much importance, as they might have been long in accumulating, but have been discharged all at once. In other cases a few casts had been the result of other conditions, such as neuro-retinitis, tumor of the brain, chronic meningitis, or medicines being given for these affections.

As to renal inadequacy, it was hard to fix on a definition for the term. It should be applied to a lessened excretion of both fluids and solids. When repeated examinations, extended over a long time, showed a low specific gravity, with an abnormally low production of urea in proportion to the total quantity, we had a valuable sign of kidney disease. Renal inadequacy might be simulated for a time as a result of nervous disturbances or of a calculus, especially if of sudden development.

He thought it important to watch the heart. Failure of compensation was one of the most certain signs of an approaching end.

The Relation of Albuminuria to Life Insurance.—Dr. JAMES TYSON, of Philadelphia, read a paper thus entitled. He said the remark was sometimes made that life-insurance examiners let some bad kidney cases escape them. On the other hand, while that might occasionally happen, the reverse was often true, that they lost some good risks by judging of a man's chances of life entirely on the strength of finding some albumin and casts in his urine. He would leave to a special classification such types of albuminuria as that of adolescents, cyclical albuminuria, and that due to diet. These he would call functional. Where they resulted from overeating of proteids, it appeared that the liver killed more red blood-cells than could be changed into urea, and the excess left the body as albumin. He would define the functional class of albuminurias as an escape of albumin in some special way past its containing wall. To say certainly that in any case it was purely functional and unaccompanied by any alteration of structure in the kidney, would require some years of observation and a close following of certain rules. Still, it was sometimes possible to establish that a man whose urine regularly contained albumin had no change, or tendency to change, in his kidneys, and that he was a good risk for a life-insurance company.

Some of these rules were the following: 1. In all other respects the man must be healthy. 2. His urine must contain no true casts. 3. The total daily quantity must not be increased by as much as one fifth of its normal amount. 4. The specific gravity should be estimated for the quantity passed in twenty-four hours and without relation to meals. Specific gravity was least significant when it was high. Thus, if the true specific gravity was 1.012, the risk was probably good; under 1.010 or 1.008 it was bad. 5. High arterial tension and hypertrophy of the heart were unfavorable signs. 6. In aged persons functional forms were less likely to occur than between twenty-one and thirty-five years. After forty a careful and long examination would be necessary before accepting the risk. 7. Gout was always a bad indication. It was followed in time by true nephritis. 8. Retinal symptoms were always of unfavorable import. 9. Statements brought by patients that other examiners had or had not found casts were never to be accepted without personal verification.

The author related as an illustration of a risk that had proved good the case of a man whose family were gouty, his own mother having a gouty kidney. This man had had lumbar pains from muscular rheumatism, which had, however, left him. He was forty years of age, and gave good results under all tests, except that his urine contained albumin. As he was now after a number of years in good health, it had probably been a merely functional form.

Dr. A. JACOBI, of New York, said it would be impossible to criticise three papers of such excellence as those of Dr. Edes, Dr. Janeway, and Dr. Tyson. He only wished to call attention to a simple anatomical fact which might explain the frequent occurrence of albuminuria in children without kidney disease. Furthermore, kidney diseases were common in children along with diseases of other sorts. In children there was, he said, a peculiar discrepancy in the growth of the arteries; the renal arteries grew very fast, and grew ahead of the kidney tissue. The capillaries of the kidneys of young children did not permit water to pass through them as it did in the case of the adult; there was a great disproportion between artery and kidney tissue and power to transmit water.

Dr. PYE-SMITH, of London, remarked that everybody had felt the difficulty of deciding what albuminuria meant. He liked the term functional as describing the sort of disorder in the renal tissue. Physiological was to him not a good term to use in this connection; it led to a false sense of safety. Though some had

once thought that albumin normally came to the kidney and was reabsorbed there, that idea was not believed in so much now.

When a school-boy showed albumin in his urine shortly after bathing in cold water, we now knew that he needed careful watching. He had known a case beginning thus where cardiac changes, Bright's disease, and hæmatinuria came on later. In all functional albuminurias close observation was called for lest we had mistaken what the condition was, or a real disease was shortly to follow. As to fatty degeneration, we knew the kidney was liable to it; thus, in pernicious anæmia, phosphorus poisoning, and phthisis.

In regard to life-insurance risks and examination of the urine for albumin, he was the examining physician for two large London companies. He had tried the finer tests, such as picric acid, but had come back to the old heat and nitric acid. The delicate tests, such as that by protiodide of mercury, were certainly too delicate to be of practical value. He found it not well to be too close with young men applying for insurance if they simply passed a little albumin; but a low specific gravity with a little albumin was a very serious matter, in his opinion. He had found it best to form his ideas and rules in this direction from an average of many cases in the same condition, of the same age, etc.; not from individual cases.

Dr. F. P. KINNIOTT, of New York, said that he had published some years ago a series of cases of children where albumin for a time was passed in large amounts, but no casts. He had observed them ever since; they were now in good health, and had grown up normally. In all but one the albumin had disappeared, and in that one it appeared only at times. Digestive disturbances had apparently been the cause.

Dr. F. P. PORCHER, of Charleston, remarked that in yellow fever it was very common to observe albuminuria, though without a high temperature being present, and it was a very bad sign. This acute nephritis might destroy life in the first ten hours. On this account it was that the main chance for successful treatment was in the first ten hours. If cases were then treated promptly and efficiently by cold applications and mercury, yellow fever was as safe as any acute disease he knew of.

The Cardiac Changes in Chronic Bright's Disease.—Dr. A. L. LOOMIS, of New York, read a paper with this title. (See page 505.)

Dr. FRANCIS DELAFIELD, of New York, remarked that Dr. Loomis in his paper had put forward several propositions which he wished to deal with separately. In the first place, he had said that cardiac hypertrophy was often developed without any change in the kidneys except thickening of the inner and middle coats of the renal arteries. The speaker thought that without doubt the change might begin in the arteries of the kidney and then extend, but that we rarely found these conditions present at the autopsy-table. There we generally met with the diffuse inflammation. He liked to take a broader view. We knew that in adults and old persons there was a growth of connective tissue in the endocardium, lungs, arteries, and kidneys, which was essentially the same change as that which constituted emphysema, endarteritis, and nephritis, and might be called a chronic fibroid degeneration. It occurred in these various organs all together and simultaneously much oftener than separately—a curious fact. It was also curious that it was a change which the patient often bore for years without trouble, while in other people it was one of the most fatal diseases that could be developed. One reason of this was that some developed high arterial tension. This high arterial tension, the speaker continued, came and went without explanation, unless it was that some change occurred in the walls of the blood-vessels; but why this occurred in some and not in others we did not know. It made the good cases and the bad cases according as it was

present or not, and, in his opinion, helped much in making the heart undergo hypertrophy instead of the changes in the walls of the vessels bringing that about.

In the second place, Dr. Loomis had said that chronic nephritis was usually associated with dilatation of the heart and degeneration of its wall without the presence of endocarditis. He could not see why his experience differed so much as it did from that of Dr. Loomis in this respect, unless they made their observations with different purposes, for they worked on largely the same material. The speaker knew that many nephritic patients had a bad heart action and a feeble heart during life, but he had not found dilatation and degeneration after death in any large proportion of cases. He looked upon cardiac degeneration as a possible secondary complication, not as a primary lesion. Heart disease with a large white kidney came after endocarditis in his experience.

Dr. GEORGE L. PEABODY, of New York, agreed with Dr. Loomis as to the relative infrequency of cardiac hypertrophy. He had read before the Academy of Medicine in New York the results of the examination of 2,000 cases of nephritis, mostly of a chronic sort. Of these, in the larger number, 70 per cent., there had been no hypertrophy of the left ventricle, but, on the contrary, in many it had presented an atrophied condition. He had long since concluded that the size of the heart must be disregarded so far as concerned its showing kidney disease to be present or not.

Dr. PYE-SMITH, of London, thought Dr. Loomis was on the right path.

Dr. WILLIAM OSLEE, of Philadelphia, remarked that he divided up the conditions present at the end of a chronic nephritis. In some cases hypertrophy of the left ventricle was a marked lesion; other patients died suddenly of effusions and serous inflammations; in others the end came by heart failure and dropsy; and it was very common to see dilatation and degeneration with the heart failure. He thought a sclerosis in the coronary arteries had directly much to do with these degenerative changes in the heart.

Dr. LOOMIS, in closing the discussion, remarked that Dr. Delafield must have made his observations in a different way and for different purposes. The speaker was certain of the sections he had made; he had made them without preconceived notions and had been astonished at finding what he had seen. The cardiac change, to be sure, did not always go so far as to cause dilatation, and was not necessarily the primary change. He simply believed that feeble heart commonly occurred at the bedside, and was an unfavorable sign. A sclerosis and fibroid degeneration came first, and led to more or less hypertrophy; but when the disease got far along he expected dilatation and degeneration. It meant that life was near its end.

The Relation between Chronic Interstitial Nephritis and Angina Pectoris.—Dr. SAMUEL C. CHEW, of Baltimore, read a paper with this title, in which he showed that occasionally these two diseases were parts of a single condition. Whether the state of the kidney led to the heart affection in such cases, or whether the angina caused the chronic nephritis, was the inquiry which the title of his paper at once gave rise to. It was known that the heart was often affected by disturbances of the kidney function and that heart diseases produced renal stasis. Might not both be the results of a common cause? There was no mention in the text-books of pathology of any essential connection between the two having been traced. Some books gave chronic nephritis as a complication of angina which sometimes appeared. To him the fact that nitrite of amyl, which so often gave relief in angina, had also a marked effect on the renal function, indicated a close relation between the two. He then related several instances where angina and

chronic nephritis had co-existed, especially the contracted kidney of interstitial nephritis. In some of these, renal symptoms, albumin, and hyaline casts had been well marked. In some the autopsy had shown degenerations in kidney, arteries, and heart-wall—probably all resulting from a common cause. He did not think uræmia could be the cause of angina, as in that case the attacks would be less occasional; but he looked more to a nervous disturbance as the cause of both the angina and the contracted arteries. Nitroglycerin relieved both, probably, in the same way. He did not think the causes of angina were so local as to depend on changes in the coronary arteries, although these might be accompaniments.

Dr. PEABODY, of New York, said that he agreed entirely with Dr. Chew. Those cases where the patient died in his first attack of angina and no change was perceptible in the heart certainly seemed to point to the nervous system as the seat of the disease. One fact was of importance—namely, that drugs so often failed to relieve the pain. They seemed to act only when there was spasmodic contraction of arteries.

Reports on the Progress of Medicine.

SURGERY.

By MATTHIAS L. FOSTER, M. D.

The Ætiology of Tumors.—Dr. Woodhead ("Edin. Med. Jour.," July, 1888) discusses in a clear manner the knowledge we possess on this subject at this time. He holds that the essential feature in the formation of a tumor is that we have in it the result of impaired nutrition, which may be the case even when there is actually more nutriment going to a part. By the law of heredity he explains as within the range of possibility that if cells are formed for generation after generation under the action of some irritant, their specialization may be gradually interfered with and a less and less active irritant serve to keep up this new form of cell until eventually an acquired form may become more or less permanent, especially if constitutional conditions assist.

He points out that the tumors met with in infancy, adult life, and old age correspond closely with the tissues which at these ages are the most active. According to Paget, the tumors of foetal and early life are usually sarcomatous. Primary encephaloid cancers which are sometimes met with in early life may, in almost every instance, be referred to organs in which there appears to be some interference with the development. In adult life the connective and epithelial tissues are growing about equally and the tumors usually found are adenomas, cystic glandular tumors, cystic sarcomas, and fibro-adenomas. In old age both of these tissues have passed their prime, but the epithelial tissue retains the greater vitality, and at this time cancers and epitheliomas are common.

This development of the active tissue into tumor he holds to be due to an irritant which may be the same for the different forms of tumor at the different ages. If this irritant is applied as the functional activity of the cells is declining, they are stimulated to increased vegetative activity, and, as they are now neither sufficiently organized nor sufficiently nourished to perform their full function, a number of imperfectly developed epithelial cells are formed. Hence we meet with cancer of the breast usually in women between the ages of forty-five and fifty, while epitheliomas of the skin and mucous membranes usually appear later—between the ages of sixty and seventy.

There are marked differences in the structure of the tongue in the foetus, child, adult, and old person. In the foetus there is a rapid growth of connective tissue with a delicate epithelial covering. In the child two or three years of age the connective tissue has a more definite structure and the epithelial cells present their characteristic appearance and arrangement. In the adult the connective tissue is still more defi-

nite in character, the layers of epithelium are more numerous, and there is a rather more marked horny layer. In the old person, between the ages of fifty and seventy years, the connective tissue is thinned and the fibrils are wide apart and appear atrophied. But the masses of epithelial cells are now considerably branched, finger-like processes passing down from the main mass into the connective-tissue layer, and in places small cell nests are formed. In this condition one can readily understand how a slight continuous irritation of the tongue may cause an epithelioma.

Cell proliferation is caused by imperfect nutrition, which may be due to want of food, increased demand for food set up by an irritant, or to increased difficulty on the part of the cell of taking in food and excreting waste, on account of its size and position. Malignant tumors are formed when there is a preponderance of anabolism or catabolism of the tissues, because of the demand on the resources of the tissues being in excess of their nutrition. The irritant giving rise to this increased demand may be a simple injury, parasite, microbe, or the long-continued action of some organic or inorganic irritant, or chronic catarrh. These irritants can give rise to a tumor only when the conditions of the tissues are so altered by irregular nutrition or age that the line of resistance is passed.

What is Cancer?—Dr. Braithwaite ("Lancet," June 30, 1888) maintains that proliferation of cell elements is not alone the cause of malignancy, as when this occurs in other tissues than epithelial the result is not necessarily malignant. The subject he divides into two questions, viz., Why is proliferation of epithelial cells malignant when proliferation of other cells is not so? and What is the cause of the proliferation? To simplify the subject, he confines his argument to malignant disease originating in epithelium, omitting sarcoma and its varieties.

To answer the first question he advances that the natural properties of epithelial cells are such that when growing out of place, or proliferating, encapsulation is impossible, and that, therefore, infiltration necessarily results. Epithelial cells are normally separated from the subjacent tissues by a basement membrane developed from the mesoblast. As long as this membrane is intact, infiltration can not occur, but if this is by any means penetrated or destroyed, the epithelium is free to grow in direct contact with the tissues. If the tissues from a state of lowered vitality are predisposed to cancer, this may result.

The properties of cells in general bearing upon the question of malignancy he holds to be: "1. The relative natural hardness of the cells. 2. The rapidity of growth and reproduction. 3. The ordinary mode of death. 4. The existence or not of a natural secretion. 5. The contour of the surfaces of the cells. 6. The shape of the cell as a whole. 7. The shape of the surface of a growing mass, whether flat-tish or consisting of a number of processes. 8. The relation of the blood-vessels to the growing mass. 9. The degree of compressibility or yielding under pressure of individual cells. 10. The degree of cohesion between the individual cells."

An epithelial cell is probably more hardy than the cells with which it comes in contact after the basement membrane has been penetrated. It is able to live on scanty nourishment, and when given much greater nourishment than normal is stimulated to more active growth. Its ordinary mode of death is by abrasion, not by fatty degeneration and absorption; hence below the surface its ordinary mode of death is impossible and the cells accumulate. It grows quickly, and in the growth of a mass there is probably reproduction by division going on at varying rates throughout. It is probably less compressible than most cells and is angular in outline; these characteristics enable epithelial cells to penetrate and infiltrate the cellular tissue which should be their capsule. Epithelial cells have a secretion of their own which in their changed situation can not be thrown off, but must lodge in the interstices of the tissues and favor deeper penetration. The adhesion of these cells to one another is not great, so that, when subjected to pressure by the surrounding fibrous tissue, single cells will become detached and slip through the barrier where there is a weak spot or minute gap, this being favored by the pent-up secretion.

How does the epithelium first get beneath the basement membrane? Two factors, combined or separate, will tend to produce penetration, viz., diminished resistance of the basement membrane, or increased pressure of the epithelium upon it. The first may result from impaired

health from any cause, old age, mental shock and depression, and eczema of the mucous surfaces. The second from accident, disuse of formerly active glands which become blocked with old epithelium, mechanical pressure and friction, irritation of the deepest layer of epithelium by minute foreign bodies, and from causes not yet understood.

What is the cause of this proliferation? Probably from the removal of a force which may be called the force of formative restraint, or from the addition of a force unknown. It seems not improbable that the great change in the habits of the population in regard to consumption of animal food has something to do with the increased frequency of the disease. Still, this does not form a satisfactory explanation; it is only a surmise to be considered. A cause as yet unknown remains to be ascertained, but this would not explain all cases of cancer, for some commence in such ways as have been considered. A knowledge of the cause of spontaneous proliferation of epithelium would point out one path by which the increasing death-rate from the disease might be checked.

Fracture of the First Rib Alone.—Mr. Marsh (*ibid.*) discusses this rare fracture, which he professes to have recognized four times in about three thousand casualties. He says that in the absence of displacement the symptoms can be but slight—perhaps not enough to cause the patient to seek surgical advice. These fractures are usually incomplete, so displacement is the exception. There will be localized pain, sometimes vaguely referred to the shoulder, perhaps felt only on certain movements of the arm or shoulder, but always to be localized by careful manipulation, especially in the supraclavicular fossa. In the more severe cases and where the fracture is complete pain will be felt during ordinary or deep respiration, on coughing, and on putting the scaleni into action. Crepitus may be obtained when the fracture is complete and through the anterior half by fixing the cartilage as far as possible and by moving the rib in the supraclavicular fossa. Injury to the lung or pleura will exhibit the usual symptoms. The diagnosis must be from contusions of the shoulder, scapula, and clavicle, which are often co-existent. The treatment employed was bandaging as for a fractured clavicle.

Traumatic Diaphragmatic Hernia.—Farwell (*ibid.*) reports a case of traumatic diaphragmatic hernia which is of interest on account of the symptoms presented and because the patient lived sixteen years after the accident. During this time he enjoyed good health, only occasionally suffering from slight dyspepsia which yielded readily to treatment. It was noticed, however, that his complexion gradually became muddy in color, his lips blanched, and his tongue bloodless, as though his spleen was affected. He finally died with symptoms of intestinal trouble.

On autopsy, a large opening was found in the diaphragm through which the stomach and a large portion of the small intestine had passed into the thoracic cavity, where they were found lying upon the left lung, which was compressed into one fifth of its natural size. In the abdominal cavity the only intestine seen was the ascending, transverse, and descending colons and a small portion of the ileum. The spleen was flat, pale, and much thinned.

Tension.—Mr. Bryant (*ibid.*) thus summarizes his lectures on tension as met with in surgical practice: 1. The pain associated with every form of inflammation of the bone or of its periosteal covering is due to tension, and the severity of the pain is a fair measure of its intensity. 2. In acute inflammation of the bone or of its periosteum, tension is the chief cause of necrosis; and in the subacute and chronic forms it is a potent cause of their chronicity, as well as of the destructive changes which, as a rule, follow. 3. The relief of tension, wherever met with, when the result of inflammation, is an important principle of practice which should always be followed. In bone the principle is most imperative, on account of the difficulties under which natural processes act in that direction, by reason of the absence of elasticity or yielding in bone, and by reason of the anatomical arrangements of its vessels which favor blood stasis. 4. To relieve tension in the softer tissues of the body, the local application of leeches, local or general venesection, acupuncture, aspiration, punctures, and incisions may be requisite; whereas, to carry out the same practice in endostitis or periostitis, subcutaneous or open incisions down to the bone, and the drilling, trephining, or laying open of bone by a saw, may be required, the

choice of method having to be determined by the requirements of the individual case. 5. In the early or hyperæmic stage of inflammation of bone, before destructive changes have taken place, experience seems clearly to indicate that the relief of tension—as indicated by a dull, aching pain, etc.—by means of drilling or trephining into bone, may arrest the progress of the disease, and help toward a cure by resolution; whereas, in the exceptional cases in which this good result does not take place, suffering is saved and destructive changes are limited. 6. In articular osteitis of every kind and variety and in every stage this mode of treatment can not be too strongly advocated, as tending toward the prevention of joint disease. 7. In acute or chronic abscess of bone, diaphyseal or epiphyseal, the abscess cavity must be opened as any other of the soft parts, drained, and dressed in the most appropriate way—the principles of treatment being the same in hard or soft tissues, although they are modified by the anatomical conditions of the parts.

A New Surgical Dressing.—Hewetson (*ibid.*) recommends China grass as a soft, silky, very highly absorbent fiber used in various manufactures. The combings form an elastic silken wool which, when rendered aseptic, is an excellent absorbent dressing. It is also relatively cheap.

Empyema.—Oldman (*id.*, June 16th) reports a successful case of treatment of empyema by “perflation”—*i. e.*, injection of the cavity with air which has passed through a strong solution of carbolic acid. A solution of one to ten was used. The injection was performed by the patient daily. It was commenced more than five years after the first operation for empyema, about the eighth day a large quantity of very offensive pus escaped, and after this the disease decreased until it ceased on the eighteenth day.

Nephrolithotomy.—Mr. Henry Morris (*ibid.*) reports four successful cases. As he remarks, it is desirable as a step toward accuracy in diagnosis and precision of exploratory methods that every case should be recorded in which a renal calculus has been removed, and also every case in which a calculus has been suspected and searched for but not found, the symptoms being due to other causes.

[The latter class of cases seem to us by far the more important, as the records we have serve to justify the operation, and a knowledge of the causes which produce symptoms which simulate those of nephritic calculi is necessary for a thorough, careful diagnosis. But this class is the one we see little of, and we expectantly await the paper Mr. Morris promises on this subject.]

Lithotripsy in Children.—Numerous cases are now appearing in the various journals which show the early age at which lithotripsy, or rather litholapaxy, may be performed. The prognosis of lateral lithotomy in children has long been regarded as favorable, but this is true only by comparison with the results of the operation on adults. There is a certain death-rate attached to it, and if litholapaxy is followed by fewer deaths and shorter convalescence there seems to be no reason why it should not be preferred whenever practicable.

The Diagnosis of Encephaloid Cancer of the Testis.—Colles (“Dub. Jour. of Med. Sci.,” July, 1888) gives these points of diagnosis from hydrocele, the condition with which this disease is most often confounded: In hydrocele the testis can be grasped at the lower and back part of the tumor, feels smooth, and pressure gives the well-known sensation to the patient. In encephaloid cancer it can not be so readily separated, is hard, irregular on its surface, and pressure does not cause the same sensation. Fluctuation is deceptive. In hydrocele the tumor feels more yielding, may change its form on change of position, and the fluid is movable. In malignant disease the semi-fluid substance can not be moved from its position. In malignant disease the cord is readily felt, may be enlarged, can be moved under the finger, and no other substance can be felt. In hydrocele a portion of the tunica vaginalis about the cord is more or less distended with fluid. Removal of the testicle when cancerous should be considered only when the cord is uncontaminated by the disease.

Separation of the Coracoid Epiphysis of the Scapula.—Bennett (*id.*, Aug., 1888) records a case of this lesion in a boy six years of age who had his arm nearly torn off by a tram-car. It was associated with fractures of nearly all the ribs on that side, fracture of the forearm, and rupture of the axillary vessels and most of the nerves. The coracoid process was detached at its base, the line of separation passing

through the proximal side of the cartilage, and at the upper and back part, taking off a scale of bone from the supraspinous fossa of the scapula. Pathologically, he considers that this was an epiphyseal separation, although he acknowledges that the center of the coracoid is essentially different in its homology from the ordinary epiphyses.

The Mortality from Major Amputations.—Dr. Page ("Lancet," July 14, 1888) presents some very interesting and valuable statistics regarding the results of major amputations performed in the Royal Infirmary, Newcastle-on-Tyne. During 1887 there were 17 amputations for injury with 2 deaths, and 43 for disease with no deaths. During the period from April 1, 1878, to December 31, 1887, there were 155 amputations for injury with 16 deaths, and 277 for disease with 15 deaths, giving thus a mortality of 7 per cent.—9.6 per cent. for injury, 5.4 per cent. for disease. During the period from April 1, 1878, to December 31, 1882, the mortality was for injury, 18.4 per cent.; for disease, 5.2 per cent.; of the whole number (160), 10.6 per cent. From January 1, 1883, to December 31, 1887, the mortality for injury was 4 per cent.; for disease, 5.4 per cent.; of the whole number (282), 4.9 per cent. During the last five years there has been only one death from pyæmia or other form of blood poisoning. A larger number of very severe amputations, as at the hip joint, were performed during the latter period.

Aneurysmal Varix in a Stump.—Dr. Robinson (*ibid.*) reports an interesting case of aneurysmal varix, caused by a blow upon the stump remaining after amputation of the leg seventeen years after the operation. During this period the patient had no trouble with the stump, except slight abrasions about the knee. On examination, a pulsating tumor was found occupying the posterior aspect of the stump. This was dissected out, and the popliteal vessels were tied. Two seemingly aneurysmal sacs were found, which were in reality varices of the popliteal vein, nearly globular in shape. The distal and smaller constituted the extremity of the popliteal vein after its ligation at the time of the amputation, and opened above into the larger varix. The artery showed no alteration in its walls, though its lumen was diminished; at its termination it communicated by a flap-like opening with the distal varix.

Varicose Aneurysm at the Bend of the Elbow.—Mr. Anderson reports a case of this kind, which has become rare in these days of anti-venesection. His remarks regarding the difficulty of recognizing anatomical landmarks during operation for this trouble are well timed. Compression failed to cure in this case, so finally the radial, ulnar, and brachial arteries were ligated ("Lancet," July 28, 1888).

Preventive Surgery, as illustrated in Knock-knee and Flat-foot.—Mr. Ellis ("Brit. Med. Jour.," June 30, 1888) maintains that treatment of these deformities based upon strengthening of the muscular support is highly satisfactory. If it is admitted that failure of muscular support leads to yielding of ligaments and altered bony surfaces in joints, it appears that vigorous use of the muscles will make them strong and taut; that in this condition they relax and thus renew the overstretched ligaments, and also, by exerting constant pressure, remodel the altered contours of the bony surfaces of the joints. The mechanical law he states thus: According to the parallelogram of forces, a well-known law, if a force acting in the line from the knee toward the hip be opposed by a force acting in the line from the knee toward the foot, in a case of knock-knee, the resultant will be the diagonal of the completed parallelogram, or a tendency toward bow-legs. But all the muscles attached to the leg bones below and to the pelvis above do act in the line from the knee to the hip, while the weight of the body acts from the knee toward the foot, so these muscles draw the knee toward a straight line between the foot and the pelvis, when, as in the erect position, the foot is a fixed point. This action should be utilized in correcting knock-knee. This explains also the spontaneous recoveries which do occasionally occur, and the fact that muscular exercise will remove the deformity.

For flat-foot he maintains "for prevention promote, for restoration renew, the functions of the flexor longus pollicis." The tendon of this muscle subtends the plantar arch in the same relation that a bow-string has to a bow, and must exercise a most important influence on the flexible arch. The writer has obtained the most satisfactory results on himself, as well as others, by treatment based on these lines.

The exercise he recommends is to bring the foot to extreme tiptoe,

the knee and hip to full extension, and then, after a pause, to suddenly and vigorously draw downward. This he obtains by raising a weight by means of a cord running over pulleys, by turning a wheel placed so high that the handle is with difficulty reached when at the highest part of the cycle, by pumping, if the handle is placed high enough, or by bell-ringing.

He believes that in flat-foot supports do more harm than good by preventing free action of the short flexor muscles. He is "equally certain that for knock-knee they are in principle wrong and in practice unnecessary. So also of tenotomies in either deformity. Osteotomies and resections," he says, "I can only regard as unwarrantable mutilations."

A Foreign Body in the Male Bladder.—Browne (*ibid.*) relates this curious case: A gentleman, having a little difficulty in micturition, molded a paraffin candle into the shape of a bougie and introduced it, but, on attempting to remove it, very little came away. After that he became more and more uncomfortable, until, six weeks later, a mass of paraffin, incorporated with phosphatic matter, was crushed in his bladder with a lithotrite, considerable brought away, and the rest passed, a little at a time, for about three weeks.

Acute Suppuration of the Knee Joint treated by continued Irrigation.—Treves ("Brit. Med. Jour.," July 7, 1888) reports two cases which resulted in complete cures, complete restoration of function having followed. The irrigation was accomplished by passing a stream of cold water, with a minute quantity of corrosive sublimate, carbolic acid, or boric acid, through a tube passing through the joint. The tube was fenestrated in the joint, and clamps were placed on it before it entered and after it left the joint. By means of these clamps the amount of fluid passing through the joint could be regulated, as well as the distension of the joint. By closing the lower clamp, the joint could be fully distended as often as was thought necessary.

Dissolution of a Nail in the Stomach by Hydrochloric Acid.—Molony ("Brit. Med. Jour.," July 14, 1888) records a unique case. A carpenter accidentally swallowed a nail about two inches long. He immediately felt severe pain in the œsophagus and stomach. His food was limited to bread and milk, while large quantities of hydrochloric acid were administered with the object of forming a soluble salt of iron. He was kept under the influence of chlorodyne, and the bowels were relieved occasionally by an injection. After two days the motions were blackened and the pain gradually subsided, until the patient became quite well.

Vesical Symptoms due to the Kidney.—M. Guyon ("Annales des mal. des org. gén.-urin.," April, 1888) relates an interesting case of a patient, aged forty-two, who had had several attacks of nephritic colic and three lithotripsies. Finally he was seized with sharp pain in the region of the right kidney, followed by a series of nephritic colics growing more and more intense, and by very frequent micturition, which was accompanied by severe vesical pain at the beginning and end of the act. The urine became bloody, but little or no pus was found. Examination failed to find cystitis, but a hard mass was felt at the vesical end of the right ureter. An autopsy revealed inflammatory lesions at the end of the ureter, renal calculi, and dilatation of the right kidney with loss of its cortical substance.

The Formation of a New Acetabulum.—Ogston ("Annals of Surg.," September, 1888) suggests and has performed with good results the formation of a new acetabulum in cases of congenital or spontaneous dislocation of the hip joint. In tubercular cases the danger of tubercular auto-inoculation is far too great to justify such an attempt being made. The head of the femur is sawn off according to Volkmann's plan, leaving a projecting point. A hole is then gouged through the os innominatum, just above where the acetabulum should have been, large enough to easily admit the point of the thumb. The projecting point of the femur was then placed in the hole and the wound closed by sutures. This idea was based upon the known tendency of perforations in the os innominatum to be filled with fibrous tissue instead of bone, which rendered it not unlikely that if a hole were thus made the point of the femur, if lodged in it, would readily be retained if the opening were sufficiently large, and would unite by fibrous union and so leave a firm and movable joint. In the case reported this desirable result seemed to be obtained. The operation was performed January

11, 1888, and seven weeks afterward the child was walking about with a movable hip.

Wheelhouse's Operation.—Mr. Chavasse (*ibid.*) forcibly advocates the advantages of Wheelhouse's method of treating urethral stricture impassable to any catheter or guide. The method consists in passing a probe-pointed grooved director along the urethra to the stricture, carefully avoiding any false passage, making an incision in the perineal raphe from a point just above the knob on the director to the outer edge of the anal sphincter, dissecting down in the middle line, and opening the normal urethra at a point above the stricture. The edges of this opening are seized with acupressure forceps and the book-like end of the director is used to hold the urethra upward. The entrance to the stricture now lies immediately below the portion of the canal that has been opened. An ordinary probe or probe-pointed director is carefully insinuated, usually with difficulty, through the stricture, then by its side a flat director is passed into the bladder, and upon this the whole length of the stricture is laid open with a probe-pointed bistoury. The after-treatment and complications liable to be met with subsequent to the operation he details in a brief but clear and exact manner.

Suprascapular Dislocation of the Shoulder.—Mr. Robson (*ibid.*) reports a case of this very unusual dislocation. In this case the dislocation was complicated by a longitudinal fracture separating the greater tuberosity from the head and extending down the shaft. Attempts by manipulation and extension to reduce the dislocation having failed, the joint was cut down upon and the glenoid fossa was found to be filled with callus and plastic material thrown out around the fracture, which rendered reduction impossible. Three months later the patient was free from pain and had a good range of movement of the arm.

The observations and measurements made in this case are of peculiar interest, as only three cases have hitherto been placed on record. The circumference of the shoulders, taken by passing a tape under the axilla and over the shoulder, was the same on both sides, $14\frac{1}{2}$ inches. From the acromion to the internal condyle—right, 10, inches; left, $11\frac{3}{4}$ inches. From the head of the humerus to the internal condyle—right, 12 inches; left, 12 inches. The elbow could be made to touch the thorax, while the fingers touched the opposite shoulder, although the dislocation was present.

Miscellany.

THERAPEUTICAL NOTES.

Caffeine and the Salicylates in Headache.—Dr. James Little, of Dublin ("Dublin Jour. of Med. Sci.," June, 1888; "Glasgow Med. Jour.," November, 1888), writes of the treatment of headaches resembling migraine by means of sodium salicylate and caffeine. In a case of which he gives notes, that of a lady who had suffered for eight years with headaches occurring at various intervals, he prescribed the continuous use of bromide of zinc and cannabis, and advised her to take at the beginning of an attack twenty grains of salicylate of sodium in a wineglassful of water made effervescent by the addition of a dessertspoonful of granular citrate of caffeine. If necessary, a second and even a third dose may be given, two hours being allowed to elapse between doses. The mixture is said not to lose its effect.

The Treatment of Hydatids by the Injection of Ox-gall.—Dr. Juan Mercat ("Revist. Balear. de las Ciencias Méd.," "Lyon méd.," "Med. Chronicle"), following the example of Dolbeau and Luton, has treated a case of hydatids of the thigh, from which acephalocysts were being discharged, by irrigation with a six-per-cent. solution of boric acid and injections of ox-gall mixed with an equal quantity of lukewarm water. Three injections are said to have sufficed to expel all the hydatids with their membranous envelopes.

Cascara Sagrada in Mixtures.—Dr. John Irving ("Brit. Med. Jour.," September 22, 1888) remarks that the addition of water to the liquid extract of cascara of the British Pharmacopœia makes a muddy and rather repulsive-looking draught, but that the addition of a very small

quantity of ammonia-water renders it clear and of a bright ruby-red by transmitted light. Other drugs may be mixed with it, provided the mixture is made alkaline by means of ammonia. Associated with iron, cascara prevents the constipating effect of that drug. Dr. Irving recommends the following formula:

Citrate of iron and ammonium.....	30 grains;
Ammonia-water.....	10 minims;
Liquid extract of cascara sagrada....	$\frac{1}{2}$ –1 drachm;
Solution of saccharin (5 per cent.)....	enough to sweeten;
An aromatic water	to 6 ounces.

An ounce to be taken three times a day.

Bernd's Physician's Pocket Register.—We have received a copy of this publication, an account-book adapted to the pocket, and have examined it carefully. The result is that we are satisfied that it must be accorded a high rank among the devices for securing simplicity and saving labor in keeping physicians' accounts. There is no occasion for using any other book with it, as the primary entries serve the purposes of those ordinarily made in the day-book, journal, and ledger. It is published by Messrs. Henry Bernd & Co., St. Louis.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

A POSSIBLE SUBSTITUTE
FOR TRACHEOTOMY AND INTUBATION
IN CERTAIN CASES.*BY EDGAR HOLDEN, M. D., PH. D.,
NEWARK, N. J.

THE case of gummatous stenosis of the larynx presented to this association two years ago, in which, after the employment of all the modern devices for relief, I performed thyroid laryngotomy, led me seriously to consider the possibility of some as yet undiscovered method of relief. A recent case of croupous stenosis in which neither intubation was permitted because of resistance to the gag, nor tracheotomy because of preconceived notions, suggested a device for divulsion. This was to be inserted by puncture through the superior angle made by the thyroid alæ. It consisted of two narrow strips of gold lying flat together, an inch and a half long, an eighth of an inch wide, and a thirty-second of an inch thick, which bowed after introduction to any desired extent by the approximation of their protruding ends. The trivial incision was, of course, through the base of the epiglottis, but no larger than that made by a small tenotomy knife. This was abandoned through fear of necrosis and because it dilated only the supraglottic larynx, and could be used only on the well-developed patient.

A better method suggested itself, which is the occasion of this essay. Before presenting this will you kindly grant me your indulgence for a few remarks upon the improvement in the mortality of the present methods and the toleration of the larynx under manipulation, whether for dilatation or for temporary relief?

It is the custom for writers to make exhaustive research into the bibliography of their subject and to go back at least to Hippocrates or Paracelsus, but this has been so well done by members of this association and others since the relative merits of tracheotomy and intubation have engrossed our attention, that it would take too much of your valuable time to repeat it.

The title of this paper may be paraphrased as "a new proposition for the relief of stenosis," and appropriately follows the interesting essays that have preceded it.

It may appear strange at this day to attack as unartistic and unmechanical so time-honored a procedure as tracheotomy, but probably every man, when he attempts to force the round tube through a straight cut in the trachea, feels that it is, after all, a somewhat barbarous expedient. One may get a better idea of the mechanical character of the operation by trying it on a rubber tube, or, better still, upon the trachea removed from the body of some animal.

The availability of the operation, its antiquity, and, above all, the necessity for immediate supply of air to a

dying patient, have, however, stamped it as correct, while, notwithstanding this, effort has been unceasing to devise a substitute. Perhaps if the mortality afterward were more favorable, this would be less energetic; but as it is we owe it not only to ourselves but to the public to leave no means untried to find a safer if not a better means of relief. This feeling has long actuated our profession, and is the basis of efforts innumerable in the way of catheterism, intubation, and the various methods of dilatation of the occluded larynx.

Now, how far has the mortality been improved? It would aid us greatly to answer this question if we could always distinguish in our statistics between death from operation and death notwithstanding operation. As this is impracticable for obvious reasons, we must approximate by drawing deductions only from large numbers of cases.

The 1,698 cases of Duchek (von Ziemssen), the records of the hospital at Prague (von Ziemssen), and the 5,000 cases of Professor Cohn (Ashhurst's "Surgery") agree with the deductions of Trousseau that tracheotomy in croup and diphtheria gives about 25 per cent. of recoveries.

The 21,853 cases recently collated by Lovett and Monroe ("Am. Jour. of the Med. Sci.") show a much better result—viz., 28 per cent. of recoveries.

Before the recent German surgical congress, Herr Rehn, who had performed tracheotomy 1,926 times, professed even better results—viz., 28.4 per cent. This is tracheotomy as it is; what it may become under the modern views as to antisepsis may be inferred from the experience of the Marburg Hospital, in which, during the last three years and a half, 53 per cent. have recovered ("Deutsch. med. Wochenschrift," 1888). Dr. Karl Roser, of that institution, covers the tube with gauze dipped in sublimate solution and rubbed with iodoform, changed on the second day, continued till the fifth, and then changed to the ordinary tube. This difference, if hereafter confirmed, indicates clearly the influence of the purely surgical part of the procedure upon the mortality.

It would be unfair to bring into contrast the results of intubation even with the large number of published experiences before us, yet we may say that the detailed statements of Dr. O'Dwyer ("Med. Record," October, 1887), of Dr. Francis Huber, Dr. W. P. Northrup, Dr. A. Caillé, Dr. Dillon Brown ("Med. Record," July 23d), and last year that of Dr. Fletcher Ingals before this association giving about 1,000 cases ("N. Y. Med. Jour.," July 2, 9, 1887), show a mortality of, in round numbers, 27 per cent. Larger experience will undoubtedly improve this, but the small difference is surprising in view of the greater apparent danger of tracheotomy. There is so little difference indeed that, while the former is less barbarous, the inference as to the cutting operation is either that it is less dangerous than it appears, or that its danger is counterbalanced by others of a different character in intubation.

As the matter of danger from either is to be weighed in suggesting a possible substitute, may I take the risk of annoying you with what you already know, and hastily enumerate the principal sources of this? For tracheotomy:

* Read before the American Laryngological Association at its tenth annual congress.

hæmorrhage, erysipelas, gangrene, necrosis of cartilage, sepsis through the wound, ulceration of the trachea, inflammation from inspiration of air unmodified by the normal passages.

For intubation: apnoea and laceration of tissue from prolonged efforts at introduction, interference with deglutition and nourishment when most essential to improvement, occlusion of the tube or of the trachea by pushing down the membrane, ulceration of the trachea by pressure of the tube and consequent sepsis or necrosis, aspiration of retained secretions, inflammation from the passage of food into the respiratory tract, expulsion of the tube by cough when no one is near to replace it, coughing up and swallowing the tube, forcing



FIG. 1.

the tube downward in efforts at removal, or injury from forcible attempts to seize the tube with the extractor.

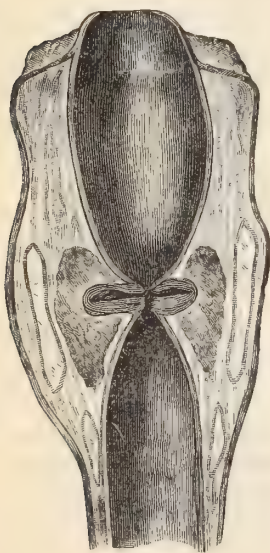


FIG. 2.

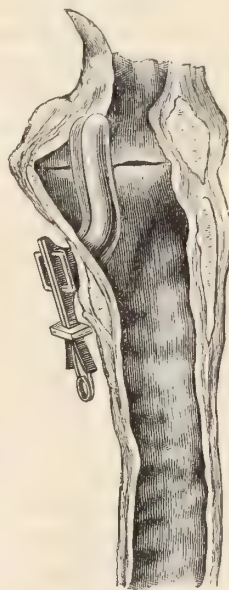


FIG. 3.

I think it self-evident that the size and character of the open wound of tracheotomy greatly enhance the mortality (for, however carefully made, it is practically a contused and lacerated wound). This, of course, is especially true in pseudo-membranous disease. In occlusion by neoplasms, in hypertrophic or hyperplastic changes, paralysis of the abductors, spasm, œdema, etc., the danger from sepsis is far less, and the question becomes one of tolerance of a foreign body.

With reference to this, the catheterism of Desault (1793), the tube of Bouchut (1801), Fig. 10, the experience of

Loiseau, Weinlechner, Green, Reese, and a host of others with which you are familiar, and the tubes of Dr. O'Dwyer, in these forms of stenosis, have established the fact that the larynx will bear indefinitely the presence of a smooth metallic body.

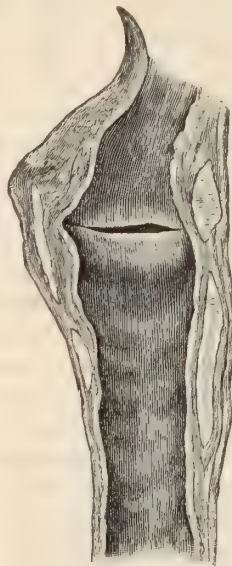


FIG. 4.

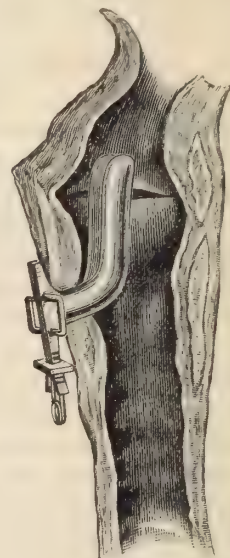


FIG. 5.

As to the tolerance of the larynx under dilatation, the experiences you have already heard to-day, and those of Mackenzie, Störck, Schrötter, Liston, Trendelenburg; the dilators of various types and patterns—Navratil's, Whistler's, McSherry's; the flexible metal bougies of Dr. Asch; and the many ingenious expedients given in medical literature—combine to testify, without columns of figures, as to the possibilities in this direction.



FIG. 6.

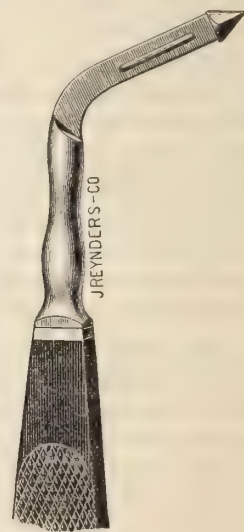


FIG. 7.

Now, so far as I have been able to learn, all attempts at dilatation, catheterism, tubage, or intubation have been made either through the mouth or from below through the tracheal cannula, and these methods all commend themselves for cases to which they are individually applicable. The

method I would submit differs radically from any of these. It is divulsion through the crico-thyroid space. There is nothing new under the sun, and it is quite possible that some one has before entertained the same idea, although I have not been able to find a record of it. The divulsor is quite small, and consists of two blades hinged at the base. They may vary from three quarters of an inch to an inch and a quarter in length, from an eighth of an inch to a fourth of an inch in width, and from a sixteenth of an inch to an eighth of an inch in thickness. It is curved to the shape of the larynx, so as not to impinge upon the base of the epiglottis. A handle, with a blade for perforation, accompanies it, detachable instantly after introduction, different-sized divulsors being adapted to the same blade. This handle, however, is not essential, as the perforation can be made with a tenotomy-knife. The two blades flare at the lower end, which is to remain outside, the smaller ends, when introduced, clasping the perforating knife and curving upward, while the knife-handle curves downward. Once in, the flanges are pressed slightly together, the blade is withdrawn, and the divulsor is closed, passed upward into place, separated, and held by a small sliding plate. The trivial wound is thus closed by the instrument, a small portion of which alone remains in sight. The crico-thyroid space, readily detected by the finger, can be perforated instantly; the perforation is easy, almost bloodless, and as harmless as any incised wound of the respiratory tract can be. The instrument can be withdrawn and reintroduced very quickly.



FIG. 8.



FIG. 9.

It is almost impossible to give a clear idea of this device without drawings, and these are submitted, together with two of the instruments.

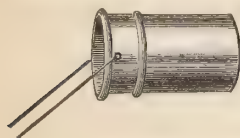


FIG. 10.



FIG. 11.

Colored drawings of the larynx, made by me from dissections on the recent subject, are submitted to show the normal lateral constriction of the larynx, with its supraglottic and subglottic portions (Fig. 1), the appearance upon antero-posterior section (Fig. 4), the instrument introduced through the crico-thyroid space (Fig. 5), and the same in a larynx contracted by a preservative fluid (Fig. 3). Figs. 6, 7, 8, 9, 10, and 17 show the instrument, with the handle and blade for perforation and introduction, and also the various appearances of the divulsor when detached. These are of the actual size adapted to the adult larynx; those for children and infants are of the same shape, but shorter, to be used with the same blade and handle. A short forceps (Fig. 12) accompanies the divulsor to aid in manipulation.

Fig. 13 shows the position of the hand in introduction necessary to prevent a too deep perforation and consequent wounding of the posterior laryngeal wall. As the drawings sufficiently explain the device, and the instrument itself is before you, it will perhaps be unnecessary to give a more detailed description.

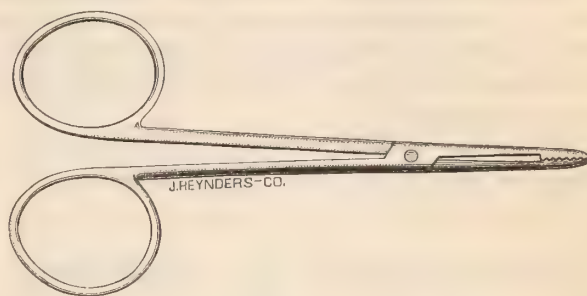


FIG. 12.

It is quite possible that in great tumefaction of the larynx it will be desirable to use wider blades, and this would not be difficult, nor would harm result from a slight transverse section of the dense fascia over the crico-thyroid space, as is done in Boze's operation, sometimes called bloodless tracheotomy.

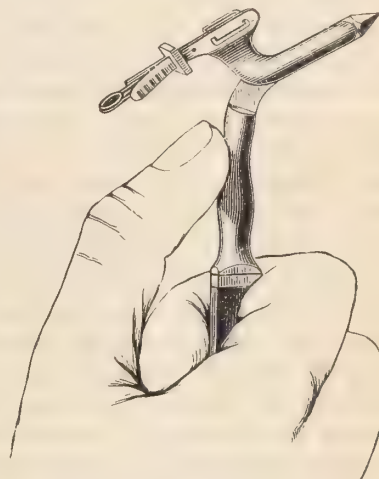


FIG. 13.

This suggestion would not preclude a subsequent tracheotomy, nor a preliminary attempt at intubation. Whether or not the procedure is applicable to children under four years of age experience alone will show. It may perhaps occupy a place between the two familiar operations. It can be done by a tyro in the profession. It permits of breathing through the natural channels. It can be done with greater celerity than either tracheotomy or intubation. It will usually be bloodless, since the only artery likely to be wounded, the median branch of the superior thyroid, very rarely rises so high as the crico-thyroid space, and, if present, would be pushed aside by the spade-shaped blade. The instrument can be quickly withdrawn and replaced.

Permit me, in conclusion, to again refer to some of the dangers of tracheotomy and intubation, and to see if any of them would be likely to be met by the procedure suggested. Some are of necessity common to all operations, but the

danger of hæmorrhage, erysipelas, ulceration, and sepsis would be lessened; apnœa during introduction, interference with deglutition and so with nourishment, occlusion by membrane or by its being pushed downward, tracheal ulceration, aspiration of retained secretions, and inflammation from passage of food into the trachea, would be avoided; and expulsion by coughing, swallowing the instrument, or forcing it downward into the trachea, would be impossible.

The "certain cases" alluded to in the title of this paper would at least be any where immediate and rapid operation for relief is demanded.

The divulsor is made by John Reynders & Co., of Twenty-third Street and Fourth Avenue, New York.

CLINICAL REPORT ON SULPHONAL.

By WILLIAM H. FLINT, M. D.,

ATTENDING PHYSICIAN AT THE PRESBYTERIAN HOSPITAL.

THE WRITER'S attention having been called to sulphonal by Dr. E. C. Wendt's article in the "Medical Record" of June 2, 1888, as well as by editorials in the June number of the "Therapeutic Gazette" (page 376) and in the "New York Medical Journal" of July 7, 1888 (page 9), he placed the drug on trial at the Presbyterian Hospital during his recent summer service in that institution. The observations then begun have been continued during the autumn service of Dr. A. H. Smith, to whose kind courtesy the writer is indebted for the privilege of reporting the more recent cases. The writer is also under many obligations to Dr. D. M. Marvin, house physician at the Presbyterian Hospital, for his efficient services in observing, recording, and tabulating the results attained by the use of the new hypnotic. The clinical features upon which particular stress has been laid in the investigation are: The primary disease of the patient suffering from insomnia; his previous history; the dose of sulphonal administered; the time elapsing after the exhibition of the drug before sleep ensued; the duration of the sleep, its quality, and the after-effects of the remedy. A repetition of these data for each case is rendered unavoidable by the fact that the original tabulated form is not adapted for publication in this journal.

The sulphonal has been administered in powdered form, inclosed in capsules, and the time selected, unless otherwise stated in the reports of individual cases, has been the usual evening bed-time of the patients. In order to prevent mental impressions, either of a favorable or of an adverse nature, from influencing the results, the patients have not been informed of the nature of the drug or of its expected action. The writer has subjoined to the report certain bibliographical references to sulphonal collected from various American and foreign journals, with a view to facilitating the study of its physical and chemical properties and to aiding the reader in consulting the principal original articles relating to sulphonal which have come to the writer's notice.

CASES OF INSOMNIA TREATED WITH SULPHONAL.

1. A man, forty years of age, convalescent from an attack of acute articular rheumatism. He stated that persistent insomnia

had for several years been the bane of his existence. He had often risen from bed and walked the streets at night in the hope of so exhausting himself as to induce sleep. This insomnia was still present.

First Trial.—Dose, 30 grains; asleep in 45 minutes; slept 8 hours; quality of sleep, perfectly natural; after-effects on pulse, temperature, respiration, cerebrum, and bodily functions, *nil*.

Second Trial.—Dose, 30 grains; asleep in 30 minutes; slept 4 hours; sleep disturbed by return of pain in the rheumatic joints; after-effect, slight drowsiness during the following forenoon; subsequently morphine, combined with salicylates, was required on account of articular pain.

2. A man, aged thirty-one, with pulmonary tuberculosis in the cavernous stage, for some time an inmate of the hospital. He had been habitually kept awake by coughing, unless soothed by some anodyne or hypnotic remedy. Generally morphine had been employed.

First Trial.—Dose, 30 grains; asleep in 25 minutes; slept 9 hours; quality of sleep, natural; after-effect, drowsiness the next morning.

Second Trial.—Dose, 30 grains; asleep in 30 minutes; slept 10 hours; sleep natural and refreshing; coughing occurred occasionally without awakening the patient; after-effect, slight drowsiness the next forenoon.

Third Trial.—Identical with the second trial.

Fourth Trial.—Dose, 20 grains; asleep in 35 minutes; slept 10 hours; no drowsiness the next day.

Fifth Trial.—Dose, 20 grains; asleep in 2 hours; slept 8 hours. For two hours after the dose was given, pleuritic pains kept the patient awake, but he then slept quietly as in the other trials.

3. A man, forty-two years old. Disease, cancer of the stomach. Was generally very wakeful without hypnotic, even when free from pain. The insomnia is apparently due to the cachexia present.

Dose, 30 grains; asleep in 50 minutes; slept 8½ hours; sleep natural; no subsequent drowsiness.

4. A man, thirty-eight years of age. Disease, endocarditis and cardiac dilatation due to renal disease. Accustomed for a long time to morphine, and sleepless because of dyspnœa when deprived of it.

Dose, 30 grains; asleep after suffering from dyspnœa for 3½ hours; slept restlessly 6½ hours; no after effects. Morphine was thereafter preferred because of its tonic action on the heart and its controlling influence on the dyspnœa.

5. A woman, aged thirty-two. Disease, typhoid fever at the beginning of the third week; pyrexia moderate and easily controlled with acetanilide. The patient is quite wakeful at night, but not delirious.

First Trial.—Dose, 20 grains; asleep in 35 minutes; slept 9 hours; sleep quiet and restful; after-effect, somnolence the next morning.

Second Trial.—Dose, 20 grains; asleep in 30 minutes; slept 7 hours; sleep natural; drowsy the following forenoon, but not after noon.

Third Trial.—Dose, 20 grains; asleep in 30 minutes; slept quietly 9 hours; no drowsiness the next day.

Fourth Trial.—Dose, the same; asleep in 25 minutes; slept peacefully 7 hours; not drowsy.

6. A man, twenty-four years old. Disease, phthisis with cavities; cough keeps the patient awake. Dose, 30 grains; asleep in a short time (exact time unknown); slept 10 hours; sleep restless but not broken by cough; after-effects, none.

7. A woman, aged twenty-one years. Disease, pelvic peritonitis. The patient's pain had almost disappeared, but she was still restless and sleepless. Pain occasionally recurred.

First Trial.—Dose, 20 grains; asleep very soon (exact time not ascertained); slept all night, but in broken snatches on account of recurring pelvic pain.

Second Trial.—Dose, 20 grains; asleep in 30 minutes; slept 9 hours; sleep natural; after-effects, great refreshment and a sense of reinvigoration.

Third Trial.—Dose and results as in the second trial.

Fourth Trial.—Dose, 20 grains; asleep in 4 hours; restless from pelvic pain.

8. A woman, aged twenty-eight years. Disease, malaria. The patient has habitually used opium, and is exceedingly nervous and wakeful without it.

First Trial.—Dose, 20 grains; asleep in 35 minutes; slept 9 hours; sleep quiet; after-effect, drowsiness the following forenoon. The dose was withheld until midnight, and up to that time the patient was quite unable to go to sleep.

Second Trial.—Dose, 20 grains; asleep in 15 minutes; slept 9 hours; sleep perfectly natural and quite profound; after-effect, drowsiness.

Third Trial.—Dose, 20 grains; asleep in 40 minutes; sleep quiet; after-effects, *nil*.

9. A man, twenty-five years of age. Disease, typhoid fever, in the second week of its course. The patient is neurasthenic and is notably restless at night, although his temperature is not high (102° F.).

Dose, 20 grains; asleep in 20 minutes; slept 9 hours; sleep natural; not drowsy. This was repeated several times, with like results.

10. A man, forty years of age. Disease, acute alcoholism with tremor, slight delirium at night, and marked insomnia.

Dose, 20 grains; asleep in 4 hours; sleep broken by noisy delirium. The effect being unsatisfactory, chloral and the bromides were substituted for sulphonal in the further treatment.

11. A woman, aged thirty-six. Disease, hysteria and malarial fever. The patient is exceedingly wakeful and nervous. Her condition sometimes closely resembles *coma vigil*. She says she frequently lies awake all night, and this statement has been verified by actual observation in the hospital.

First Trial.—Dose, 20 grains; asleep in about half an hour; slept 9 hours; sleep quite normal and very refreshing; no after-effects.

Second Trial, made two days later, resulted as the first trial.

Third Trial (made five days after the second).—Dose, 20 grains; asleep in 25 minutes; slept 9½ hours; sleep quiet; after-effects, none. On the nights when the patient did not receive the sulphonal she was as restless and sleepless as usual, and complained bitterly of frontal headache. On the mornings after she had taken the drug the headache was absent in each instance.

12. A man, aged forty-five. Bright's disease, with endocarditis, valvular lesions, and cardiac dilatation. The patient affirms that he "has not had a good night's rest for a month."

Dose, 30 grains; asleep in 40 minutes; slept 9 hours. Patient awakened refreshed, but suffered so much the following day with dyspnoea that morphine was used hypodermically in the subsequent treatment.

13. A woman, aged thirty-two years. Disease, Bright's and endocarditis. The patient suffers terribly from dyspnoea, apparently uræmic in nature.

Dose, 20 grains; sleep entirely prevented by dyspnoea. Experiment not continued.

14. A woman, thirty-eight years of age. Bright's disease. She can not sleep without a hypnotic, because of severe dyspnoea, often amounting to orthopnoea. She is accustomed to the use of chloral, of the bromides, and of opium in various preparations.

First Trial.—Dose, 20 grains; asleep in 30 minutes; slept 9 hours; sleep natural; no after-effects.

Second Trial.—Dose, the same; asleep in 30 minutes; slept poorly all night.

Third Trial.—Dose, the same; asleep in 20 minutes; slept 10 hours; sleep natural; no after-effects. A week elapsed between the second and third trials, during which the patient had other hypnotics, chiefly the U. S. solution of morphine, being unable to sleep without some soporific drug.

15. A woman, aged forty-two years. Disease, neuralgia. Patient has habitual insomnia, not always due to pain, but to nervous unrest.

First Trial.—Dose, 20 grains; asleep in 35 minutes; slept 6 hours; sleep quiet and undisturbed; after-effects, none.

Second Trial (the next night).—Dose, 20 grains; asleep in 25 minutes; slept 9 hours; sleep perfectly tranquil; no after-effects.

Third Trial (after five nights, during which the patient had no sulphonal, and was perfectly sleepless).—Dose, 20 grains; asleep in 38 minutes; slept 9 hours; sleep excellent and refreshing; no sequelæ.

16. A woman, aged fifty-five. Disease, splenitis. The patient says she can not sleep on account of pain in the region of the spleen.

Dose, 20 grains; asleep in 40 minutes; slept 9 hours; sleep natural; no after-effects.

17. A man, aged twenty-five years. Disease, simple insomnia. After the patient had been wakeful for four hours, the sulphonal was given. Dose, 20 grains; asleep in 15 minutes; slept 6 hours; sleep deep and natural; no sequelæ.

18. A woman, forty-one years old. Disease, typhoid fever, in the second week, with considerable pyrexia and extensive bronchitis, leading to dyspnoea and some cyanosis. She had been sleepless for the three entire nights preceding the first administration of sulphonal, and had required morphine.

First Trial.—Dose, 20 grains; asleep in 35 minutes; slept 9 hours; sleep perfectly natural; no after-effects, save improvement in her general condition and lower range of temperature. The patient slept better and longer than when under the influence of the morphine, and subsequently slept for several successive nights without any hypnotic, when the sulphonal was again used with good results.

19. A woman, aged fifty-two. Disease, chronic rheumatism, chiefly in the hip. Has not slept at night for eight days, since the beginning of the last exacerbation of pain.

First Trial.—Dose, 20 grains; asleep in 20 minutes; slept 6 hours, but the sleep was restless, unrefreshing, and often interrupted by the articular pain.

Second Trial.—Dose, 20 grains; the result was practically the same, so that the experiment was abandoned.

20. A man, aged forty. Disease, cerebral gumma, with headache and paralysis. The patient has not slept well for two months, usually awakening every hour or two during the night.

First Trial.—Dose, 20 grains; asleep in an hour; slept 8 hours; sleep natural. The patient was somnolent the greater part of the following morning.

Second Trial.—After a week, during which the sleep had been as usual, very restless and frequently broken. Dose, 20 grains; asleep in 1½ hour; slept 8 hours; sleep very tranquil; no somnolence afterward.

21. A man, aged twenty-one years. Disease, pharyngitis. The patient has not slept well for a week on account of sore throat and cough.

Dose, 20 grains; asleep in half an hour; slept 9 hours; sleep excellent; no after-effects. On the succeeding nights no hypnotic was needed.

22. A woman, forty-seven years old. Disease, opium-habit of long standing, with obstinate constipation. Large doses of morphine were required to produce sleep at the time when trial was made of sulphonal.

First Trial.—Dose, 20 grains; did not sleep all night; complained of the gastric and abdominal pains characteristic of the interrupted opium-habit.

Second Trial.—Dose, 30 grains; asleep in 35 minutes; slept quietly 8 hours. No sequelæ.

Third Trial (made after three nights, during which the patient could get but little sleep, morphine being withheld).—Dose, 30 grains; asleep in 20 minutes; slept 8½ hours; sleep natural and without after-effects.

Fourth Trial (after five nights, during which the sleep was better but still very poor).—Dose, 30 grains; no sleep, because of renewed abdominal pain. U. S. solution of morphine, f 3 ij, and codeine, gr. j, were required to cause sleep.

Fifth Trial (after three weeks, during which natural sleep had been gradually restored, opium being withheld).—Dose, 30 grains; asleep in 25 minutes; slept 10 hours very well, and awoke feeling bright and cheerful.

Sixth Trial (after two days, the patient now having some thoracic and abdominal neuralgia).—Doses, at 8 p. m. 30 grains, and at 9 p. m. 30 grains; asleep at 10.10 o'clock; slept 9 hours; sleep broken occasionally by pain, but for only a few moments; after-effects nil, except a headache, which the patient was suffering from before the sulphonal was given.

23. A man, forty-three years old. Disease, hepatic cirrhosis with ascites, nephritis, and endocarditis. The patient has intense dyspnoea, apparently due to uræmia and to the encroachment of the diaphragm upon the intrathoracic space.

First Trial.—Dose, 20 grains; asleep not until 4 hours, because of the dyspnoea; slept 6 hours; sleep natural, although the exaggerated respiratory movements continued. No drowsiness afterward.

Second Trial (after four nights, during which opium was administered).—Dose, 20 grains; asleep in an hour; slept 5 hours; disturbed by oozing of serum from an abdominal puncture made to remove the ascitic fluid.

Third Trial (after five nights, during which other hypnotics were invariably necessary to produce sleep).—Dose, 30 grains; asleep in 15 minutes; slept 7 hours; sleep more natural than at any time.

24. A man, aged thirty-eight years. Disease, acute rheumatism. The pain is controlled by salicylates, but restlessness and insomnia persist. Dose, 20 grains; asleep in 30 minutes; slept 8 hours; quality of sleep normal; no after-effects.

25. A woman, twenty-seven years old. Diseases, endometritis and hysterical insomnia. Dose, 20 grains; asleep in 90 minutes; slept 7½ hours; sleep natural; no drowsiness after awakening. The patient was at first disturbed by noise in the ward. The sleep was devoid of the distressing dreams usually attending it.

26. A woman, twenty-six years of age. Disease, sciatica. The patient never sleeps more than three or four hours consecutively, because of pain.

First Trial.—Dose, 20 grains; asleep in 60 minutes; slept 9 hours; sleep restless and broken by pain.

Second Trial.—Practically the same results, and experiment abandoned.

27. A woman, aged thirty-five years. Diseases, alcoholic gastritis and endometritis. Vomiting and pain prevent sleep.

First Trial.—Dose, 20 grains; asleep in 70 minutes; restless sleep all night.

Second Trial (the following night).—Dose, 30 grains; asleep

in 30 minutes; slept 9 hours; sleep quiet and natural; no drowsiness the next day.

28. A man, fifty years old. Disease, dysentery.

First Trial.—Dose, 20 grains; restless and sleepless all night from tormina and tenesmus.

Second Trial.—Dose, 30 grains; the same result, so that the experiment was not continued.

29. A man, aged twenty-six years. Disease, acute rheumatism with severe pain, not yet controlled by salicylates. Dose, 30 grains; asleep in 30 minutes; slept in a broken and restless manner 7 hours, being awakened, time and again, by pain. Experiment discontinued.

30. A man, thirty-four years of age. Diseases, neurasthenia and exhaustion. The patient has been homeless for two weeks, and has suffered greatly from mental distress and consequent insomnia, never sleeping more than a few hours at a time.

Dose, 30 grains; asleep in 35 minutes; slept 10 hours; sleep natural; patient much refreshed by sleep.

31. A man, aged forty-six years. Disease, hepatic abscesses following tropical dysentery, spontaneously evacuated through the bronchi and colon. The cough and frequent dejections prevent sleep. Dose, 30 grains, repeated in an hour. Results entirely negative, and experiment abandoned.

32. A man, aged thirty-four. Disease, the opium-habit. After having been broken of the habit for several months, he had a relapse, and, after having injected morphine hypodermically for ten days, himself discontinued the habit a second time, but applied for aid in carrying out his good resolution. For three days and nights he had hardly slept at all, and was much exhausted physically and mentally. On the third day he came under observation, and, having suffered from violent gastric pain and from vomiting, was put upon the milk diet and received 20 grains of sulphonal every two hours for six hours, at the end of which time he fell asleep and slept quietly for 7 hours, awaking refreshed and comparatively free from pain. On the following three nights he took two consecutive twenty-grain doses of sulphonal, at intervals of two hours, and slept comfortably all night. On the succeeding nights he slept without a hypnotic so long as he remained under observation, which was eight days.

33. A woman, eighteen years old. Diseases, anæmia and hysteria. The patient can not sleep because of severe dyspnoea, apparently of purely nervous origin. On one occasion she had orthopnoea for some hours, and f 3 ij of the U. S. solution of morphine having failed, after two hours, to relieve the dyspnoea, 30 grains of sulphonal were administered. The patient, having kept awake two hours longer, then slept quietly for seven hours in the recumbent position. The next morning she was very drowsy, complaining that she could hardly keep her eyes open. This somnolence passed away during the forenoon.

While the cases reported above are too few to justify any generalizations regarding the exact indications and effects of sulphonal, they yet offer some interesting corroborative evidence regarding its great hypnotic value already established by earlier observations. The general conclusion which may be drawn from these observations is that sulphonal, even in single doses of 20 or 30 grains, is a safe and, in the main, reliable hypnotic, free from unpleasant concomitant effects, and usually from all undesirable sequelæ. The single objectionable after-effect witnessed by the writer has been moderate somnolence on the morning following the administration of the remedy. In none of the cases has there been the slightest derangement of appetite or digestion, nor have the circulation and respiration been

appreciably affected at the time of awaking. The cutaneous and renal secretions have neither been increased nor diminished; nausea, vomiting, and constipation have not followed the use of the drug. Several of the cases seem to show that an increase of the original dose is often not required, and that, after a certain time, natural sleep being restored, the sulphonal may be discontinued. This is the only light thrown by the writer's cases upon the important question as to the possibility of engendering a sulphonal habit or of prejudicially affecting the organism by the continued use of sulphonal. The doctrines that sulphonal is of exceptional value in insomnia occasioned by debility, neurasthenia, and mental perturbation, and that it has no appreciable anodyne properties, receive support from the history of several of these cases. Thus, in Case 30, the happiest results followed the use of the drug in a destitute, homeless, neurasthenic, and exhausted patient. The same was true in Cases 11 and 25, of hysteria. In Cases 1, 7, 19, 26, 28, and 29, the pain of acute rheumatism, of pelvic peritonitis, of chronic rheumatism, of sciatica, and of dysentery was not sufficiently controlled by the remedy to permit of quiet sleep. On the other hand, the pain of splenitis (Case 16), of cerebral gumma (Case 20), of pharyngitis (Case 21), and of alcoholic gastritis (Case 27), was not of sufficient violence to prevent the patients from sleeping under the influence of sulphonal. The effect of sulphonal was particularly fortunate in the cases of those patients who had previously been addicted to the use of opium and of other hypnotic drugs or were suffering from insomnia due to the withdrawal of these remedies. These results are illustrated by Cases 4, 22, and 32. In Cases 4, 12, 13, and 14, of insomnia due to the dyspnoea of cardiac and Bright's disease, sulphonal was powerless to produce sleep, and morphine was alone perfectly adequate to meet the indications. In Case 4, of cardiac dyspnoea, the hydrate of amylene proved fairly successful. In Cases 2 and 6 insomnia was occasioned by the harassing cough of pulmonary tuberculosis, but, under the influence of sulphonal, the patients slept better than usual, and although the cough continued during sleep, they were not awakened by it. Sulphonal also rendered excellent services in the insomnia of typhoid fever, as shown by Cases 5, 9, and 18.

The average length of time at which sleep ensued after the administration of the sulphonal was about an hour.

The average duration of sleep was a little over six hours, and success attended the use of the sulphonal in about 82 per cent. of all the trials.

The high average of successes, in a series of unselected cases, many of which were plainly unsuitable for experiment with a pure hypnotic, encourages the writer to publish this record in the hope that it may aid in hastening the general introduction of sulphonal.

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37 EAST THIRTY-THIRD STREET.

PROGRESSIVE MUSCULAR DYSTROPHIES:

THE RELATION OF THE PRIMARY FORMS TO ONE ANOTHER
AND TO TYPICAL PROGRESSIVE MUSCULAR ATROPHY.

By B. SACHS, M. D.

(Concluded from page 626.)

WE have now to turn our attention to another type, to the so-called hereditary form of progressive muscular atrophy. This type was created by Leyden (49) and warmly advocated by Möbius (50). According to Leyden, this form is characterized as follows:

The hereditary form of progressive muscular atrophy attacks several members of the same family. It appears at an early age, as a rule between the eighth and tenth years, in one case not before thirty. Males are more apt to be attacked than females (the elder Eulenburg, however, described the affection in three sisters of one family). The disease begins invariably with weakness in the back and lower extremities, and in these regions a wasting of the muscles is first observed. After a lapse of years the muscles of the upper extremities may be involved. Occasionally the patient may attain to an old age. Atrophy may become so extreme that the patients are absolutely helpless. The march of the disease is steadily progressive. Electrical reactions normal; no fibrillar contractions. The atrophy is associated with hypertrophy, particularly of calf muscles. No sensory disturbances, no disturbances of speech, of deglutition, or of ocular movements.

Leyden records the case of a man thirty-seven years of age who had trouble in walking from early childhood on, and who had decided atrophy of back and thigh muscles, with vast increase of calf muscles, without any involvement of shoulder and arm muscles. The general symptoms were of the kind stated above. Leyden counted among this class of cases a well-known one of Meryon (51), the cases of Oppenheimer (52), of Hemptenmacher (53), of Bernhard (54), and of Eichhorst (55); but all of these cases have been considered by most other and later authors to belong to the type of pseudo-hypertrophy. Leyden has been followed by Möbius, by Zimmerlin (56), by Landouzy and Déjérine (57), by Schultze (58), and by others in the description of this type; but of these Möbius and the French

authors alone can be said to be advocates of this special form.

In my opinion, there is not sufficient reason to create a separate type of disease on the points laid down by Leyden. First, all forms of muscular atrophy may be and often are hereditary. This is particularly true of pseudo-hypertrophy. Second, cases with distinct heredity often start in the upper extremities; and third, all cases beginning with weakness and atrophy in the back and leg muscles are not necessarily hereditary, as we shall see when we come to the consideration of my case of the peroneal type of progressive muscular atrophy.

As regards the first point, in the cases of Oppenheim, Friedreich, and Hemptenmacher the disease began in the muscles of the back, but spread to the upper extremities instead of the lower. Barsikow (59) has described a number of cases occurring in two families. In the members of the one family the disease attacked back and leg muscles; in the other family the spreading of the atrophy was not uniform, attacking the leg muscles in one member and in another the shoulder first and then the leg muscles. Zimmerlin (*loc. cit.*) published seven cases—four in one family and three in another. In the one family the four cases are distinctly of the juvenile type, while in the second family the two cases began in the upper extremities, leaving the legs intact, while in the third case there was involvement of upper and lower extremities and even involvement of face muscles—an approach to the type Landouzy-Déjérine.

Schultze (*loc. cit.*) describes the cases of two brothers, one affected with typical pseudo-hypertrophy, and the other with a general wasting of the upper and lower extremities. In this country Harrington (59a) has reported seven cases in which the onset was in the legs in some, in others in the legs and arms simultaneously, and in still others the legs were affected first, and only a year later the arms. Ormerod's cases of muscular atrophy in three children after measles might be used to show the same differences in the mode of onset (*cf.* No. 70).

We have, therefore, good reason for insisting that Leyden's hereditary form is not entitled to rank as a special type of progressive muscular atrophy; that pseudo-hypertrophy and Erb's juvenile form are distinctly hereditary, and, furthermore, that cases with a distinct heredity are by no means necessarily characterized by an atrophy first at tacking the muscles of the back and thighs. All of Leyden's cases would properly come under the head of pseudo-hypertrophy of Erb's juvenile form, or of the "peroneal type."

The next type of progressive muscular atrophy—the type facio-scapulo-humeral, type Landouzy-Déjérine, the infantile progressive muscular atrophy of Duchenne—can not be disposed of so easily.

Cases of progressive muscular wasting with involvement of face muscles have always been considered rare. Duchenne described several; Remak (60), Mossdorf (61), Bernhardt (62), Kreske (63), and Westphal (64) have each described one or two cases, but Landouzy and Déjérine (*loc. cit.*) have succeeded in calling renewed attention to this form, have made the most careful examinations, and have

obtained a post-mortem examination in one case. For this reason it is just to refer to the features of this type as laid down by Landouzy and Déjérine, who have seen more cases than all other recent authors taken together.

The Type Landouzy-Déjérine.—This form of progressive muscular wasting begins, as a rule, in early life, and in the majority of cases in the muscles of the face, giving rise to what the authors term the "*facies myopathique*." The lips are considerably thickened, and constitute the "*bouche de tapir*." Great stress is laid upon this tapir-mouth appearance. Later on in the course of the disease the atrophy spreads to the shoulder and arm muscles; the supraspinati and infraspinati, the subscapularis, the flexors of the hand and fingers remain normal. The muscles of deglutition, mastication, and respiratory and laryngeal muscles, as well as the ocular muscles, remain normal. In exceptional cases the disease may begin in the shoulder or arm muscles, or even in the lower extremities. The disease is distinctly hereditary. Fibrillar contractions and reaction of degeneration are never present.

In their first paper Landouzy and Déjérine published cases occurring in two different families; in the first the disease could be followed up through five generations. Cases that are described relate to a father and four sons, five other children not having been affected. The history of one son is characteristic.

The trouble began at the age of three with atrophy of face muscles; no other symptoms observed up to the age of seventeen. From that time on atrophy was noticed in the muscles of the shoulder and arm, spreading to the trunk. At the age of twenty-one atrophy had become extreme—"nothing but skin and bone"—*facies myopathique* and *bouche de tapir*. Sensation normal, sphincters also; patellar reflex lost, electrical excitability diminished in proportion to the wasting, but no reaction of degeneration. At the age of twenty-four, death from phthisis.

Autopsy.—Atrophy determined as follows: Frontalis, orbicularis palpebrarum, zygomatici, orbicularis oris, and buccinator of both sides (levator anguli oris, normal), trapezius, deltoid (infraspinati and supraspinati, subscapularis, teres major and minor, normal), biceps, brachialis anticus, and coraco-brachialis, triceps, supinator longus and extensor radialis (supinator brevis, flexor digitorum sublimis et profundus, normal), extensor pollicis longus and extensor indicis (extensor digitorum communis, extensor digiti minimi, extensor ulnaris, normal), abductor longus and extensor pollicis brevis slightly wasted, abductor brevis pollicis wasted, other thenar and hypothenar muscles normal. Lumbricalis distinctly wasted, and interossei slightly wasted; pectorals wasted; serrati and sacro-lumbar normal. Lower extremities not so carefully examined; glutæi were atrophic; no marked lipomatosis anywhere; no changes in the nervous system. Diseased muscles revealed simple atrophy of primitive muscular fibers; slight traces of increase of interstitial connective tissue and of fat. No increase in muscular nuclei.

The histories of the cases of Remak and of the other authors quoted are very similar. In some the atrophy set in in the extremities first, and in the face later on. In Remak's case both sides of the face were involved; in Kreske's, the one side only.

The similarity between this form and Erb's will be apparent to every one at a glance; it is practically Erb's form

plus involvement of face muscles. Erb never observed this complication in his own cases, and Landouzy and Déjérine argue that their cases are different on account of the absence of lipomatosis and the presence of facial symptoms. As for Erb's never having observed the facial atrophy in any of his cases, it is worth noting that in a later paper (65) Landouzy and Déjérine publish a case (No. VI) of their form in which the face muscles appeared normal during life, but, on post-mortem examination, revealed decided morbid changes. It is possible, therefore, that the same changes were present in some of Erb's cases without so excellent an observer as he being able to detect them. If this is allowed (and the French authors themselves urge the possibility of this), there is no just reason for making a separate type for such cases as they describe. They deny the resemblance between the two forms in consequence also of the invariable absence of lipomatosis; but Westphal (66) again seems to have found a decisive case which shows that the face muscles may be associated with typical pseudo-hypertrophy, and it must be remembered that Landouzy and Déjérine grant that they have found hypertrophied fibers in some of the muscles. We can not, therefore, see the propriety of creating a separate type such as Landouzy and Déjérine have described. There is a slight difference between their cases and those of Erb in the topographical distribution of the atrophy, and even this is doubtful, while their cases resemble Erb's form in the involvement of the upper arm and shoulder muscles chiefly, in the presence of hereditary influences, in the absence of fibrillar contractions, and absence of reaction of degeneration.

I wish, however, to enter a special plea for the recognition of still another type—the *peroneal type of progressive muscular atrophy*. This form was first described by Charcot and Marie (67), and, independently of them, by Dr. Tooth (68), of England, in a Cambridge thesis. Charcot and his associate reported five such cases, Tooth four cases, and Herringham (69) has recently reported one case in a family in which various members in successive generations have been similarly affected. To this list I am able to add one case of considerable interest; and similar cases, although not designated by this title, have been described by Hammond (Weathersbee ail), by Ormerod (70), by Schultze (71), and, no doubt, some other of the cases of hereditary muscular atrophy would more properly belong to this class.

The Peroneal Form of Progressive Muscular Atrophy begins in early youth, or may, as in one of Charcot's cases, attack a person beyond the age of puberty. There may be distinct family inheritance. According to Herringham, as a rule, boys inherit the disease through the mother, as has been shown to be the rule in cases of pseudo-hypertrophy. The atrophy begins in the lower extremities, first attacking the extensor hallucis longus, then the common extensors of the toes, and then the peronei; the small muscles of the foot may be affected as well. The calf muscles atrophy a little later, while the muscles of the thighs offer greater resistance, and do not undergo atrophy until the disease has well run its course. Several years after the onset of the disease in the legs the hands become involved; the interossei, the muscles of the thenar and hypothenar, as well as

the muscles of the forearm, become wasted; the supinator longus, the muscles of the shoulder, of the neck, trunk, and face, remain normal. The atrophy need not be entirely symmetrical. Fibrillar contractions occur occasionally; the reaction of degeneration is present in some muscles; the skin reflexes remain normal.

My own case is as follows:

Author's Case III.—R. J., a Russian girl, aged twelve, was referred to my department at the Polyclinic by Dr. Gibney. She is the third child of healthy parents; two born later died—one of diphtheria, and one of cerebral trouble after a fall. No disease similar to the one from which this patient suffers has been known in any branch of the family. While carrying this child, the mother was considerably troubled with swollen feet and legs, possibly of nephritic origin, but is now a healthy, stout woman. The child was asphyxiated when born; no doctor in attendance. Patient began to walk at nine months; had a slight fall at the age of ten months without doing any injury to herself. At the age of three, mother noticed that there was something wrong with the right knee, and in the hospital in St. Petersburg a plaster-of-Paris splint was put on. This the child wore for seven weeks. She could walk perfectly well after that, and played as well and ran as fast as any child. Has had a number of diseases—measles at the age of one year, small-pox at the age of four, scarlet fever at the age of six, and typhoid fever at six and a half. In spite of all, recovered and walked perfectly well. Came to this country one year ago; nine months ago fell on left hip, and for some weeks had pain in left hip. While recovering from this fall she noticed that she had difficulty in moving the toes of the right leg. This is now five months ago. The impairment of motion gradually grew worse until the child was not able to move the toes at all. Never had pain on her right side. Her present manner of walking developed very slowly. At first sight her gait seemed to be characteristic of poliomyelitis. Child complains of fatigue, particularly in mounting stairs; no other special symptoms. Patient was a bright girl; no hysterical tendencies. The history shows that the present condition of paresis developed slowly, and was not preceded either by convulsions or fever. Furthermore, that there was no pain accompanying the paresis at any time. Has distinct feeling of movement under the skin.

Examination.—Girl of medium size. Upper extremities, good grasp with both hands. Forearm muscles and hand muscles well developed; supinators, also biceps and deltoids, well marked, the latter not hypertrophied. Trapezi and rhomboids of normal strength; right pectoral a little thinner than left. Right shoulder blade shows slight winged appearance. Right serratus slightly weakened. Distinct wasting of the right leg, thigh, and gluteal region. The leg muscles of the right side more distinctly atrophied than the thigh muscles. The child can not lift toes of right foot while resting the heel on the ground. The same movement can be performed fairly well on the left side. Can not raise herself on tip-toes on the right side, but can do so with the left foot. Posterior surfaces of thighs proportionately less developed than anterior surface. Right extensor quadriceps very weak; left weaker than normal, but stronger than on the right side. Evident atrophy, therefore, of anterior tibial and posterior tibial group of right leg, of posterior thigh muscles, and the glutei muscles of right side. In the lying position, ten centimetres below lower edge of the patella, right leg, 23½ ctm.; left leg, 24½ ctm. Eighteen centimetres below iliac crest, right thigh, 37 ctm.; left thigh, 39 ctm.

Knee-jerk absent on right side; on left side it was impossi-

ble to obtain the knee-jerk for several weeks; it is now present, however, and very lively. Occasional fibrillar contractions. No sensory disturbances anywhere. No rectal or visceral symptoms. The triceps tendon reflex present on both sides but weak. Occasional fibrillar contractions have been noticed.

Electrical Examination.—Faradaic examination of all nerves and muscles gives satisfactory responses except in the case of the right peroneal nerve, which exhibits diminished faradaic excitability. On faradaic excitation of peroneal nerve, tibialis anticus muscle contracts very feebly. Serratus also responds more powerfully on the left side than on the right to current of moderate strength. Left pectoralis major does not respond as well as right to faradaic current. Galvanic examination satisfactory. The following alone need be mentioned: Examination with the 10 ctm. square electrode: Right peroneal nerve, KCC, $2\frac{1}{2}$ ma.; AOC, $3\frac{1}{2}$ ma.; ACC, $6\frac{1}{2}$ ma. Left peroneal nerve, KCC, $2\frac{1}{2}$ ma.; AOC, $3\frac{1}{2}$ ma.; ACC, $6\frac{1}{2}$ ma. Right tibialis anticus muscle, direct examination, KCC, 7 ma.; ACC, 8 ma. Left tibialis anticus, KCC, $4\frac{1}{2}$ ma.; ACC, 6 ma. Electrical examination thus shows a decided diminution of response to the faradaic current, and to the galvanic current as well in the tibialis anticus of the right side, the KCC being almost equal to the ACC. Ormerod would have said that the right peroneal nerve showed reaction of degeneration with regard to the anode, but this, I insist, is nothing morbid. We have, therefore, slight electrical changes in a single muscle; the other muscles of the peroneal group respond normally.

The diagnosis in this case could have rested only between acute anterior poliomyelitis, a peripheral neuritis, or this form of progressive muscular atrophy. The mode of onset, gradually and without pain, without fever or convulsions, argues against a poliomyelitis anterior acuta, as well as against peripheral neuritis. The atrophy, too, is not as great as we would expect in a case of spinal infantile palsy. All of the symptoms—the paralysis proportionate to the wasting of the muscles, the absence of the knee-jerk, and the slight changes in electrical reaction—can be best explained by the diagnosis we have made. Furthermore, the disease is not retrogressive as poliomyelitis acuta would be, but gradually progressive, and the slight indications of this progression in the muscles of the trunk lend further support to the view of a progressive muscular atrophy, which is strengthened still more by the occasional presence of fibrillar contractions.

The diagnosis in such cases as these must be made with the greatest care, but I have no doubt that some of the cases which have hastily been put down as cases of peripheral neuritis will prove to be cases of this type. From poliomyelitis anterior acuta it will not be difficult to differentiate this disease, nor from neuritis. It will be more difficult to distinguish between these cases and those of a widespread atrophy following traumatic joint lesions, in which, as I have seen a number of times, the atrophy may spread with surprising rapidity, and may affect the entire extremity. We must, therefore, either rely upon the history in these cases, upon the presence or absence of fibrillar contractions, or must exclude a purely traumatic atrophy in case the atrophy jumps from the affected part to some other portion of the body.

In many cases of progressive muscular atrophy of the typical form the histories show that the disease was first

noticed after some accident. The question therefore arises whether it may not be possible for typical progressive muscular atrophy to develop after a joint lesion in a subject predisposed to this disease.

We have now to consider the relations of this peroneal form of progressive muscular atrophy to the other primary dystrophies which we have discussed.

It will be seen at once that the anatomical distribution is entirely different from the four forms of primary myopathies discussed above. If the atrophy spreads to the upper extremities, it involves the muscles more after the fashion of a Duchenne's atrophy than after the fashion of a pseudo-hypertrophy or an Erb's form of atrophy. The analogy to Duchenne's form becomes still closer when we consider that this peroneal form is distinguished from the other myopathies by the occasional presence of fibrillar contractions and by alterations in the reaction of degeneration. The spreading of the atrophy from the muscles of the big toe and the small muscles of the foot to the muscles of the legs and thighs reminds one of the manner in which the atrophy spreads in the upper extremities in cases of typical progressive muscular atrophy. There seems, therefore, to be good reason to separate this form from the simple muscular myopathies and to make it a subdivision of typical progressive muscular atrophy. This form might be properly entitled the leg type, in contradistinction to the hand type which would represent the ordinary form of Duchenne's progressive muscular atrophy.

If the ordinary progressive muscular atrophy is a poliomyelitis anterior chronica cervicalis, the leg type might represent a poliomyelitis anterior chronica lumbalis. But this is speculative pathology and needs corroboration, as indeed all the clinical and anatomical features of this form do.

In the preceding pages I have given an account of the commonly received forms of progressive muscular wasting. Some cases will surely be found that can not properly be classed under any one of these heads. Schultze's case, for instance, had some of the features of pseudo-hypertrophy, some of those of Erb's form, and in the presence of the fibrillar contractions and reaction of degeneration in some muscles approached to the type of typical progressive muscular atrophy. I have had occasion to observe one case in a child about seven years of age in which there was a general wasting of all the muscles of the body excepting those of the head. The power of the legs and arms was weak, without there being any actual paralysis. There was a winged appearance of the scapulæ, but there were no other disproportionate atrophies or hypertrophies anywhere in the body. The wasting was an entirely uniform one. Such a case as this one is mentioned by Charcot in his recent volume (72) and by Gowers in his text-book. Baeg (*loc. cit.*) and Oppenheim (73) have reported cases with involvement of the face, tongue, laryngeal and ocular muscles, which it is impossible at present to classify under any of the ordinary forms of progressive muscular atrophy.

There is good reason, therefore, for allowing that there are mixed cases of progressive muscular wasting, and that the exact rank of these cases can not be determined at present, except that, according to their cardinal symptoms, they

should be classed either with the spinal or primary myopathies.

To complete this study of the various forms of progressive muscular atrophy, it will be necessary to add a few words regarding the histological changes in the muscular tissue. Let me say by way of preface to these remarks that no proper inferences can be drawn from mere harpoon examinations. All such cases I have therefore excluded from the present consideration, and have used with considerable caution even those cases in which pieces of muscle were removed by the knife. As in my own case of pseudo-hypertrophy, I believe that very limited inferences only can be drawn from the examination of such small pieces, and that, after all, post-mortem examinations alone are entirely satisfactory in giving evidence regarding all the changes that may occur in the atrophied muscles.

If the histological examination of muscles is to be of value in making a differential diagnosis between the various forms of muscular atrophy, it must help us, first of all, to differentiate between the primary muscular dystrophies and the spinal forms of progressive muscular atrophy.

The changes in muscles atrophied from spinal lesions are: A change in the striation of the fibers and a narrowing of the fibers, an increase in the number of muscle nuclei, and possibly segmentation of the nuclei; granular or fatty degeneration of the fibers, and occasional globules of fat between the muscle-fibrils. I need not add that some or all of these changes will be present according to the length of time the atrophy has existed, and all of these changes have been found both in spinal forms and in primary dystrophies, but the increase in the muscle nuclei is never as great in the latter as in the former form. Furthermore, in the spinal forms hypertrophied fibers are never found, while they are common in the purely muscular types. Müller is the only author who records an exception to this rule, in a case of poliomyelitis of old standing. In spite of this fact, we may say that the presence of any considerable number of hypertrophied fibers, side by side with atrophied and degenerated fibers, is sufficient proof to exclude such a case from the spinal form. Roth (74) professes to be able to differentiate between atrophy from spinal lesion and atrophy following nerve lesion. He states, for instance, that the atrophy of the muscular fibers in progressive muscular atrophy affects the length of a fiber only, causing a shortening, while the breadth of the fiber remains normal. In cases of muscular atrophy after nerve lesion there is, according to this author, simple atrophy and interstitial sclerosis.

And now the question arises. Is it possible to differentiate by histological examination between the various primary myopathies? The histological changes of ordinary pseudo-hypertrophy are too well known to need a detailed description in this place. We have, as a rule, narrowing of fibers with changes in their contour, granular or fatty degeneration of the fibrils and accumulation of fat globules between the fibrils, and increase without marked proliferation of the connective tissue. In pieces of muscles excised from the living subject, enlarged fibers will be seen in the immediate vicinity of fibers of normal or less than normal dimensions. In post-mortem examination of muscles in pseudo-hypertro-

phy we need not expect to find fibers of unusual breadth, for the examination generally is made at a time when atrophy has supervened upon a preceding stage of hypertrophy. A slight increase in the muscle nuclei is often found in typical cases of pseudo-hypertrophy, but unusual increase is suspicious of muscular disease of spinal origin. It was on the strength of this increase of these nuclei that Friedreich insisted that typical progressive muscular atrophy began as a myositis. Schultze (*loc. cit.*, p. 24) mentions peculiar giant-cell formation as occurring in cases of pseudo-hypertrophy which he regards as the residue of muscular protoplasm with its proliferated nuclei.

Jacoby (75) thinks that the disease consists in the main of a chronic inflammation invading both the perimysium and the muscle tissue, and would call the process a myositis progressiva hyperplastica. The careful drawings Jacoby has made are very different from the pathological findings in other cases and need further corroboration; besides, his case is a pseudo-hypertrophy of rather unusual type, exhibiting, as the author says, "hypertrophy to an enormous extent of the deltoids, infraspinati, biceps, triceps, and costal portion of the pectoralis major." He likens his case to Case X of Friedreich, and this is now taken to be a case of Erb's juvenile type. Westphal, in his typical case of pseudo-hypertrophy, found, on post-mortem examination, enormous increase of adipose tissue in which the muscular fibrils were nearly of normal size; increase of the interstitial connective tissue; no hypertrophic fibers; strands of connective tissue occasionally pass through the fatty tissue, few of the muscular-fiber groups appearing to be strangulated by strands of connective tissue.

The sections from the vastus externus of my case of pseudo-hypertrophy have been cut from tissue hardened in Müller's fluid and alcohol, and stained with alum-carmin, hæmatoxylin, and eosin-hæmatoxylin. The specimens show slight loss of striation, slight increase of connective tissue and its cells, and a number of enlarged fibers crowding in upon other and narrower fibers. The changes are slight in degree, and I have no doubt that if a piece had been excised from the midst of the muscle, instead of from its surface, the specimens would have exhibited more decided changes; but, slight as these changes are, they confirm me in the belief that hypertrophy is a very marked and early change, and is associated with early increase in the connective tissue.

In Schultze's case, which stands midway between pseudo-hypertrophy and Erb's juvenile form, the muscles were examined more exhaustively than ever before. Schultze found, in addition to the giant-cell formation alluded to above, large numbers of fat cells in the muscular tissue, an increase of connective tissue and remnants of hypertrophied, normal, and atrophic fibers, and an enormous increase of nuclei which the author thinks greater than in ordinary cases of pseudo-hypertrophy, though he quotes one case of Erb's, of pure pseudo-hypertrophy, in which the finding was entirely similar. The vacuoles which were present in Schultze's case represent a very late stage in the pathological process, and, if developed to the extent they were in this case, can not be due to hardening.

In Erb's juvenile form most of the conditions are exactly the same, but it is important to note a few points of difference. In his first paper, in the "*Archiv f. klinische Medicin*" for 1884, Erb insisted that the hyperplasia and proliferation of the interstitial connective tissue, and next in order the considerable deposit of fat in this connective tissue, were the most characteristic histological features of the disease (p. 492); the atrophy of the fibers and the presence of a few hypertrophic fibers were thought to be features of secondary importance. In his later articles Erb changes his original opinion and corroborates the hypothesis first put forth by Barsikow—viz., that the hypertrophy of the muscular fibers is the primary and most characteristic change; this hypertrophy may finally pass into an atrophy. Other and secondary features are a rounding off of the contours of the fibers, an increase in the muscle nuclei, an increase of connective tissue and its nuclei, and fissuration and vacuolization of the fibers. Lipomatosis may occur.

Hitzig (78), the latest author on this subject, has published very careful researches which tend to corroborate Erb's views. Hitzig has examined four cases; three are typical, one decidedly atypical and suggestive, I think, of amyotrophic lateral sclerosis. He concludes that "the primary and most important change in juvenile atrophy does not consist of any interstitial process, but is decidedly parenchymatous, and, according to the intensity of the disease, is represented by slight or excessive hypertrophy of the fibers. . . . The anatomical changes in pseudo-hypertrophy, on the other hand, are characterized by active changes in the connective tissue." If this proves to be correct—and there is a strong probability in its favor—it will corroborate the conclusion I arrived at by an analysis of the clinical facts—that pseudo-hypertrophy and Erb's juvenile form can not be considered entirely identical. Hitzig expresses the opinion also that the atrophy of most fibers is due to mechanical compression by hypertrophied fibers, the hypertrophy being due to an irritative process. The atrophy of the fibers is followed by the deposit of fat, the latter being a mere substitute for the diminished muscular tissue.

In cases that developed most rapidly the atrophy is therefore most extreme. This compression theory of Hitzig will need further corroboration. Singer (79) is in agreement with Hitzig, except that he regards the increase of connective tissue as the first stage in the production of fat.

As to the histological changes in Landouzy and Déjérine's type, we must rely chiefly upon the changes reported in the one case on which Landouzy and Déjérine held an autopsy. They found simple atrophy or entire disappearance of the primitive muscular bundles, a few hypertrophic fibers, but note that the case had taken an exceedingly rapid course. No indication of degenerative atrophy; very slight increase of interstitial connective tissue and fat, which would seem to prove that the atrophy must be due to some cause within the muscle fibers; no unusual increase of the nuclei. All this, therefore, is in agreement with Erb's form, and goes to prove the close relationship between these two forms.

The changes in the peroneal form of progressive muscular atrophy have not been reported upon by Charcot and Marie, Tooth, Herringham, or Hoffman (80). In my own case I have not yet obtained permission to excise a piece of muscle, but hope to do so before long, and it will be interesting to note whether the changes resemble those of primary dystrophies or are similar to those found in muscular atrophy from nerve and spinal lesions. Leyden states that in the hereditary form the muscular changes are the same as in typical progressive muscular atrophy, but his hereditary cases presumably include the peroneal type, and thus his statements might be taken as an indirect histological proof of the close relationship between the peroneal form and typical progressive muscular atrophy.

From this survey of the histological researches in various forms of muscular atrophy we conclude that an examination of muscular changes may help us to differentiate between typical progressive muscular atrophy and the primary myopathies; and again, if Hitzig is correct, between pseudo-hypertrophy and Erb's juvenile form. There does not, however, appear to be a marked distinction between Erb's juvenile form and the remaining primary dystrophies, the histological changes in the peroneal form being still undetermined.

The argument which has been held throughout these pages leads to the following conclusions:

1. Progressive muscular atrophy, type Aran-Duchenne, is due to spinal-cord disease. The peroneal type of progressive muscular atrophy bears close resemblance to this form and may possibly have a similar pathology.

2. Duchenne's type of progressive muscular atrophy might be termed the hand type, while the peroneal form would represent the leg type.

3. Pseudo-hypertrophy is not of spinal origin. Lipomatosis is a mere incident in the course of the disease and is associated with wide-spread atrophy in various parts of the body.

4. There is a close relationship between pseudo-hypertrophy and Erb's juvenile form of progressive muscular atrophy, but not an absolute identity. This close relationship is marked by the onset of the disease at an early age, by the entire absence of fibrillar contractions in both forms, by the absence of reaction of degeneration, and by the occurrence of lipomatosis some time during the course of the disease. They differ from each other in the distribution of the muscular atrophy, and possibly in the histological changes in the affected muscles.

5. Hereditary muscular atrophy does not deserve the rank of a separate clinical entity, all forms of primary myopathies being occasionally hereditary.

6. The type Landouzy and Déjérine is closely related to Erb's form, the additional involvement of the face muscles not being a sufficient basis for a wide clinical differentiation.

7. Pseudo-hypertrophy and Erb's form should be regarded as the two representative forms of primary progressive dystrophies.

8. Primary progressive dystrophies are distinguished from spinal progressive dystrophies by their cardinal symp-

toms—the onset at an early age, the occurrence of true or false hypertrophy, the absence of the reaction of degeneration, and the absence of fibrillar contractions.

This paper can not be properly closed without reference to the subject of classification. The term “progressive muscular atrophy” has been variously used both to designate the fact of a general and progressive muscular wasting, and also as the proper name for Duchenne’s type of atrophy. This has led to great confusion, and it would be well if the term “progressive muscular atrophy” were to be used in a generic sense merely, and if some other name were found for Duchenne’s type. Erb’s suggestion seems to me to be a good one, and I therefore propose to designate the type Aran-Duchenne as spinal progressive amyotrophy.

If my argument against the validity of anatomical distribution of atrophies or hypertrophies as a basis for classification be accepted, the classification of muscular atrophies could be reduced to the following simple form:

1. Amyotrophie spinalis progressiva:
 - α Hand type;
 - β Leg type = peroneal form.
2. Primary progressive dystrophies: *
 - α Pseudo-hypertrophy;
 - β Erb’s form.

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33. Ross, “Diseases of the Nervous System,” vol. i, p. 991, etc., Case I.
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 - Eulenburg and Cohnheim, “Verh. der Berl. Ges.,” 1869; post-mortem examination seventeen days after death, but result accepted by all.
 - Duchenne, Charcot, “Arch. de phys.,” 1872.
 - Brieger, “Deutsch. Arch. f. kl. Med.,” 1878.
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- October 1, 1888.

THE MECHANICAL TREATMENT OF SENILE COXITIS.*

By HENRY LING TAYLOR, M. D.

By "senile coxitis" (*malum coxæ senile*) I understand a rheumatoid affection of the hip joint occurring in old people and characterized clinically by local pain, muscular spasm, wasting, stiffness, and disability, but never showing a tendency to suppurate. It may or may not be associated with similar troubles in other joints.

When the hip joint of an elderly person becomes affected in the manner indicated, the cause is usually referred to a dyscrasia with joint manifestations, called rheumatoid arthritis, an affection not confined to the aged and probably having small affinity with tuberculosis, gout, or rheumatism. Its characteristic local lesions are eburnation and atrophy of the bearings of the joint, with hypertrophy and proliferation of its peripheral parts not subject to pressure. Some cases of senile coxitis may have a different causation and morbid anatomy with a similar clinical picture.

The usual treatment is medicinal, dietetic, and local, but many patients go through the various stages of local sensitiveness and disability, sometimes with moderate constitutional reaction, often with long remissions of the active symptoms, until finally the affected joints become crippled and nearly or quite useless. Can anything be done for such of these helpless old people as seem likely to resist or have already resisted orthodox treatment?

It is stated that *malum coxæ senile* sometimes follows directly on local traumatism, and while it must be admitted that some cases of impacted fracture of the neck of the femur may have been confounded with inflammatory trouble in the observations, we can not help noticing the positive effects of traumatism in determining or aggravating attacks.

It would seem on general physiological grounds that the strain and pressure of attempted free locomotion must aggravate the local difficulty, and that an endeavor might reasonably be made to allay irritation and improve the local and general nutrition by efficient mechanical protection to the disabled hip joint. If it is feared that these old people can not or will not submit to mechanical measures, we have not found it so in our experience; indeed, I am able to make the broader statement that adult or advanced life is a much less unfavorable factor in orthopædic practice than is usually supposed. Nevertheless, in devising a plan of treatment for senile coxitis, unnecessary confinement of body and limb has been avoided.

In several cases which had resisted previous treatment, and the patient seemed urgently to need help, we have tried the plan of applying counter-traction thoroughly, and then protecting the joint from all traumatism for a considerable period. The patient is put to bed with the long counter-traction hip splint and extra weight attached, the leg being supported in a sling. At the end of a month or six weeks we find the muscles about the hip joint softer, and position and mobility improved, and allow the patient to go about on the jointed supporting splint ("Dows's"), which protects the hip joint from pressure, but allows motion at the hip, knee, and ankle. The patient is thus enabled to enjoy the benefit of fresh air and moderate exercise with a certain amount of healthy stimulation to the now quiescent joint, through the protected and pressureless motion. If progress is not satisfactory, the traction in bed is repeated, and the patient again allowed to go about after a few weeks.

CASE I.—Mrs. W., aged fifty-seven years, came in March, 1883, with the history of trouble in the left hip joint of two years' standing, but she stated that she had had some tenderness in several joints for four years. The trouble began in her right shoulder and had affected the elbows, wrists, right ankle, and one finger. The toes never got sore and the fingers were not deformed. She stated that her general health had been good, but she looked delicate and rather older than she was. The tenderness and pain in the joints had never laid her up and she had felt well throughout. About two years before she had stepped into a hole and hurt her foot, and for the past year had limped with the left leg. During the summer of 1882 she began to have difficulty in going up stairs and to feel weak and have pain in the anterior thigh muscles on motion, and stiffness in the left limb. She had noticed soreness in the left groin for two weeks, but had always supposed the pain to be due to muscular rheumatism, and never suspected that the hip was affected until told by her physician two weeks previously.

On examination, tenderness, crepitus, and limited motion were found, to a greater or less extent, in several joints, noticeably in the right elbow and both wrists. The left thigh was considerably flexed and adducted, and there was a coarse crepitus at the hip joint. She was very helpless, walking with difficulty. She was put to bed with long counter-traction splint and eighteen pounds extra weight for six weeks, and then allowed to go about on crutches, with a jointed supporting splint ("Dows's"), which took the weight off the joint.

The condition of the hip improved slowly, but perceptibly, from the start. Soreness became less, and position and motion at the hip improved. In the winter of 1884-'85 she was walking readily around the house without crutches. The following summer (1885) she went to Richfield Springs, and took the ap-

* Read before the American Orthopædic Association at its second annual meeting.

paratus off to take the baths; she found she could walk so well that she did not put it on again. When I saw her in November, 1885, she walked very nicely, and had extensive motion at the hip in all directions, with very little tenderness. The condition of the other joints seemed no better; crepitus, stiffness, and tenderness were about the same as before. In a letter just received, her daughter writes, in answer to my inquiry; "We think mother quite as active as any member of the family; a little lame, but so much better than we ever expected to see her, [we] do not notice the limp. . . . She is very comfortable, as far as the rheumatism will allow; her hands are quite weak and somewhat out of shape."

CASE II.—Mrs. R., aged fifty-eight, came in February, 1883. She was a large, strong, young-looking woman, had always had excellent health, and her family history was good. Eight years previous to coming the patient noticed that the right foot was rotated out; when she turned it in, it caused pain on the inside of the knee; this pain also came when she got fatigued. It gradually grew worse, and for the past four or five years she had given up one duty after another, owing to lameness and increased pain. She had always supposed the knee to be at fault, and neither she nor her doctor had ever suspected the hip. For two years past she had been obliged to put a pillow under the right knee in order to be able to sleep, and the knee had received electrical and other treatment.

Examination showed the right thigh considerably flexed and adducted. Mobility at the hip was almost gone, except flexion and extension through a few degrees. She never had pain except when tired—then it came on the outer aspect of the right knee; when she was still more tired, in anterior part of thigh, hip, and back. She had a moderate lameness. The functions of the knee were normal.

The patient was put to bed, with the long hip splint, sixteen pounds extra weight, and sling, for a month, during which time the thigh muscles relaxed, flexion was reduced, and pain was latterly absent. She was then allowed to get up on the jointed supporting splint ("Dows's"), and in a few days was walking nicely with the apparatus only, and feeling no pain.

The patient did well, but had on a few occasions some recurrence of pain, and once or twice was put to bed for two weeks with counter-traction as before. In January, 1885, the apparatus was removed, and she was discharged cured, walking easily, with but slight limp; position of limb almost normal, mobility increased. When last seen, over a year after her discharge, she got around very readily and comfortably, having retained what she had gained.

These results have been sufficiently encouraging to warrant the belief that many cases of intractable senile coxitis may be much relieved and an unserviceable limb restored to comfortable use by a plan of treatment such as the one described.

201 WEST FIFTY-FOURTH STREET.

A CASE OF ACONITINE POISONING.

RECOVERY.

By FERD. C. VALENTINE, M. D.

THE comparative infrequency of intentional or accidental poisoning by aconitine may warrant reporting briefly a case in point. If, from paucity of characteristic appearances or because of my lack of descriptive ability, the case proves of little value to toxicological literature, it may be

of use to younger practitioners, as a warning against allowing patients to become familiar with the places where physicians keep powerful drugs.

The paucity of symptoms observed may be attributable to the well-known capriciousness of the drug. The phial containing it was purchased some two months ago, while I was suffering with an attack of facial neuralgia, and shortly after swallowing half a tablet ($= \frac{1}{820}$ grain) I felt a numbness of the tongue, a tickling of the throat, and pricking in the extremities, which lasted fully eight hours.

I had no occasion to use the contents of the phial again, except in the instance about to be related.

B. M., aged thirty, single, German, vigorous constitution, five feet eight inches tall, one hundred and sixty-five pounds, no history or evidence of specific disease, and with only a trace of neurotic heredity, has traveled extensively in the marshy regions of East India, Africa, and in some parts of the United States, is now here for treatment of necrosis of the inferior turbinated bones. For the past two years he has resided in Central America, where he made a number of visits to the malarial coasts. He has had several attacks of neuralgia of the cervical region, together with left-sided prosopalgia. These attacks were not relieved by morphine by the stomach or hypodermically. A very severe attack of this neuralgia on the evening of August 20th caused me to give him $\frac{1}{820}$ of a grain of aconitine (Wyeth's hypodermic tablets) dissolved in about an ounce of water. Half of this solution he took at 9 P. M., and found amelioration in fifteen minutes; the other half he took at 9.30 P. M., and in ten minutes more the pain stopped entirely.

At about 10.30 P. M. of Saturday, September 15th, he called at my office, desiring relief from a severe recurrence of the neuralgic pains. Not finding me in, and remembering where he had seen me put the aconitine tablets, he found them and swallowed one of them dry. His account of subsequent doses is evidently erroneous. He stated that he waited for relief until midnight, and then took one tablet every half-hour thereafter until he had taken the contents of the phial (eighteen tablets altogether). Finding himself attacked with dyspnoea, he went to the room occupied by another young gentleman for assistance. Then he found that he had great difficulty in using his legs; he fell and had to be helped back to his room.

As I was sent for at 12.30 A. M. to attend him, I judge that he must have taken one tablet at least every two minutes, or oftener, miscalculating time in the intensity of his neuralgic pains. I found him with symptoms of paraplegia; stertorous, irregular respiration, from six to thirteen times a minute; precordial anxiety, strangling, tingling in the fauces, and a sensation as if his nose were double in size. The pulse beat twice in as many seconds, followed by from five to twenty very rapid, irregular pulsations, with frequent intermissions. The pupils were slightly dilated and responded sluggishly to light. The skin was dry, except at the back of the neck. There was no tingling in the extremities; the hands and feet were hot, but the toes were cold. This coldness of the toes afterward progressing up to the ankles, warmth of the feet was restored by the use of hot bottles.

He was conscious when I arrived, but soon sank into a species of coma, in which he did not feel two hypodermic injections of morphine ($\frac{1}{16}$ grain each) which I gave him when the heart showed increased interruptions and a decided tendency to flag. The morphine evidently stimulated the heart, which became more active. This cardiac improvement was accompanied by the return of consciousness, in a measure.

While an emetic of mustard was being prepared I gave him, as soon as he could swallow, half an ounce of whisky to further stimulate him. This was followed almost immediately by copious vomiting of undigested food. Deeming the case of sufficient responsibility to be divided, and desiring the advice of an able general practitioner, I sent for Dr. Alexander B. Pope, who, after examining the patient, indorsed the course I was pursuing. We did not essay the use of *nux vomica*, as another attack of vomiting at 1.15 A. M. was followed by a marked diminution of the symptoms of aconite poisoning. As these abated, the patient became strongly delirious. Not much importance was attached thereto, however, as this patient, like all of his family, easily becomes delirious.

Toward 3 A. M. the delirium subsided somewhat, and an intense thirst set in, which, upon being but partially satisfied by small sips of ice-water, was followed by nausea and several severe attacks of vomiting. Each effort at vomiting was followed by a partial return of the cardiac flagging, which we endeavored to meet with half-ounce doses of whisky. While each administration of whisky was followed by improved heart action, it was accompanied by increased nausea. He was then given several drachm doses of aromatic spirits of ammonia, half an hour apart, when the nausea stopped. At 4 A. M. all symptoms of poisoning had disappeared, and only a severe general headache and intense thirst remained.

For the three following days anorexia, headache, and depression of spirits were marked; these subsided after copious alvine evacuations, which resulted from the use of citrate of magnesia.

While this case presented but few of the recorded symptoms of aconite poisoning, they, particularly those of the heart and lungs, were especially alarming.

The only unrecorded symptom noted was the sensation of the nose having doubled in size. This I would not offer as an addition to the toxicology of aconite until it was confirmed by the observations of others. I attribute it to the patient's delirium being directed in the usual channel of his thoughts; he is in the habit of joking about his nose, which is of ample proportions; he has recently lost one of his inferior turbinated bones, and daily makes four or five large antiseptic nasal injections.

It is to be regretted that the patient's temperature could not be taken during the intensity of the symptoms of poisoning, as his great, almost uncontrollable restlessness made this impossible.

215 WEST FORTY-EIGHTH STREET, September 30, 1888.

DIHYDROBROMIDE OF QUININE FOR SUBCUTANEOUS INJECTIONS.

By JAMES P. PARKER, M. D.,
KANSAS CITY, MO.

THE inevitable disappointment experienced by physicians from the application of the oleate of quinine in cases where neither the stomach nor rectum will accept quinine has rendered it so desirable to obtain a suitable preparation of quinine for subcutaneous injection that many efforts have been made to produce such a salt, but with moderate success.

The difficulty has been to obtain a salt of quinine sufficiently soluble in water to make a solution concentrated enough to bring the dose within the limited capacity of the

ordinary hypodermatic syringe, and yet have it free from caustic or irritant qualities that might set up local inflammation. A solution containing about three grains of the alkaloid (quinine), or three grains and nine tenths of the ordinary sulphate of quinine, in sufficient water to make thirty minims of solution, may be considered the proportion which is not too dilute and not too caustic by concentration for hypodermatic application. It was thought at the time of the adoption of the last revision of the United States Pharmacopœia that the hydrobromide of quinine would meet the requirements, but it is to be regretted that the hydrobromide of quinine described by the Pharmacopœia can not be found in the market, and manufacturers assert that it can not be produced.

The Pharmacopœia defines a neutral or slightly alkaline salt soluble in about sixteen parts of water at 15° C. (59° F.), but no one has been able to obtain a hydrobromide of quinine in the market that can be dissolved perfectly enough for subcutaneous injection in less than about seventy parts of water at 15° C. (59° F.).

This important point of solubility in water has been the cause of failure by physicians in all attempts to use it hypodermatically. An extemporaneous solution prepared by dissolving ninety-six grains of quinine (alkaloid) in sufficient quantity of hydrobromic acid, and adding water enough to make one fluidounce of solution, has long been used by physicians in the malarial districts of the South with good results. Such a solution is unquestionably better than any that can be prepared from the official hydrobromide of quinine, but it is not free from irritant qualities.

A better preparation is obtained by direct combination of the hydrobromic acid with the base and crystallization from the solution. The chemical formula of this crystalline salt is a little uncertain, but it is probably $C_{20}H_{24}N_2O_2(HBr)_2 + 3H_2O$. (It has not been ascertained whether it has two or three molecules of water of crystallization, but it most probably has three.)

As the foregoing formula indicates, it is a dihydrobromide, consisting of two molecules of hydrobromic acid and one molecule of quinine (alkaloid). This salt is as permanent as any of the acid salts of quinine, and is soluble in five parts of water at 15° C. (59° F.), and, when dissolved in that quantity of water, the solution will have a specific gravity of about 1.056, being about the same as that of the blood. This acid salt closely resembles that of a foreign make that has appeared in the market at a very high price, and is well adapted for subcutaneous application.

The writer has administered it subcutaneously a large number of times, and has as yet produced no abscess. It undoubtedly comes as near to being the desired salt as any that has been proposed.

As all the world knows, the bromine element tends to correct quininism, even in small doses, and when large doses are required, as in pernicious intermittents, it becomes effective for good.

The Chair of Death.—At a meeting of the Medico-legal Society held on Wednesday, the 12th inst., Dr. C. F. Stillman read a paper by Mr. H. G. Carleton, describing an apparatus for the execution of criminals by electricity.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 15, 1888.

SHALL PHYSICIANS USE GOOD ENGLISH?

At first blush but one answer seems possible to this question. May not the medical man choose apt adjectives, make use of happy illustration, and avoid objectionable adverbs as well as another? Yet an absurd affectation exists to the effect that a good literary style is somehow incompatible with sound scientific attainment, and that a physician capable of presenting thought according to the genius of the language is more or less to be mistrusted. He writes too well, she writes too well, they write too well—these inflections are common expressions of criticism, with an air of “'ware the dog” half hidden in their pellucid depths. Attention to words and their uses, the narrow critics imply, presupposes a lack of practical insight and business capacity. It is a foregone conclusion that fine writing is the natural accompaniment of a life poverty-stricken in illuminating scientific events. By a mysterious process, something comes from nothing. Devoting themselves almost exclusively to clinical work—and by a strange coincidence they all do—these short-sighted critics themselves fear not form nor regard the Queen’s English. Ever and anon one of this august and exclusively clinical body announces, after the fashion of the gifted member of Parliament, but in scientific parlance and upon some scientific subject, usually of the order Dryasdust, that “the po-ta-to-a is a ve-ra good fruit-a.” Sometimes this sort of thing overflows into print, where it brings a blush to the cheek of young and other medical persons afflicted with *esprit de corps*. Fortunately, the practical beings under consideration seldom indulge in literary effort—on principle. They refuse all invitations to drop into scientific prose, even in a friendly way, and turn a deaf ear to hints in the matter of book reviews. The editorial serpent is powerless—so they say—to move them; and, like the adder, they ignore the voice of the charmer, charm he never so wisely. Clinical work is the thing. There may be a good many holes in a skimmer, but there is only one way to the top.

A great deal of living goes to a very little writing. Possibly the most difficult form of creation is literary composition. Any sentence that is distinct, clear, and well-rounded, however simple in construction, is the outcome of painstaking effort and a careful mental registering of experience. Sometimes several generations contribute to its style and vigor. Its very existence announces severe mental discipline, and familiarity with the best models. And why not? Language is the ultimate test of mind. It is the growth of definiteness in language which marks the progress of mankind. Whoever can sketch out his idea in exact words justly passes for an extraordinary man. To render an ideal visible and intelligible to others, whatever its

caliber, is a slow, laborious task, a relentless struggle. That which is most deserving of fame in art, as Balzac has it (and the term must include all creations of thought), is courage—a courage of which common souls have no conception, and which has never perhaps been explained. To act well the part of parent to an idea, raising it from birth and hapless infancy, nourishing it tenderly when it cries for food and attention at inopportune moments, clothing it in garments fifty times over that are cast away as unfit, and yet never revolting against the trials of this agitated life, but bringing out of them some masterpiece—sentence, brochure, or inspiring volume—is indeed the very triumph of courage. Shall physicians use art to represent nature? Away with the cant that any one can write too well, or draw too well, or speak too well! It is nowhere hinted that clinical work can be done too well. Boorishness in style is not an evidence of intellect, nor slovenly expression the necessary accompaniment of cultivated observation. Such defects are greatly to be deplored. Their meaning goes deep. A university graduate suggests that it should be a point of honor among medical men to write in such form that an educated person can tell what the subject-matter is, though not himself an expert in medical lore. The suggestion presents nothing unreasonable. Thought is not a thing apart from language. Viewed by the white light of sound sense, where are now the little inflections that skipped so nimbly through familiar conversation—he writes too well, she writes too well, they write too well? Gone, with the other ghosts, quite faded away. And let us trust that the petty necromancy of little minds will be ineffectual in securing for them any future existence.

NATIONAL HEALTH LEGISLATION.

THE opening of Congress has brought the usual crop of health bills, and the ease with which any gentleman can secure the introduction of a bill is taken advantage of by every one afflicted with what might be termed medico-sanito-legal *cacoe-thes scribendi* to add his mite to the shower of sanitary bills rained upon a suffering Congress. The bill introduced by Mr. Gibson, of Louisiana, on Tuesday of last week is one prepared in New Orleans. By this bill all existing sanitary national laws are to be repealed, and a health commissioner is to be appointed. This health commissioner is to act under the direction of the Secretary of the Interior, and, when once appointed, can not be removed by the President; this is in direct violation of the constitutional prerogative of the President, and can not pass either house. Section two of the bill provides for the appointment of *twenty* persons “who shall be experts in the disease to which their section is devoted.” These statutory “experts” are to be divided as follows: Five to be assigned to the “yellow-fever section”; three each for the cholera, typhoid-fever, scarlet-fever, diphtheria, and small-pox sections. Their market value, as set forth in the annual salary allowance of these experts, is placed at twelve hundred dollars each. The same section gives command of quarantines, both State and local, to the health commissioner, and puts the collectors of customs under

his command. Section three provides for the annual meeting of the commission in Washington, and supersedes all State boards of health in any case of epidemic. Sections five, six, seven, and ten provide for work already being done by the Marine-Hospital Bureau. The eighth section gives the President the power to detail Government officers—a power vested in him by the Constitution, which no statute could legally take away. Section eleven contains the essence of a bill already pending in the Senate, known as the Harris bill, which was prepared at the Treasury Department, and which is a really efficient supplement to the existing laws. Sections twelve and thirteen provide the sinews of war, and for the repeal of all previous sanitary legislation.

The only really good thing about the proposed bill, which as a whole violates every known principle of American government, is the fact of the impossibility of its passage.

MINOR PARAGRAPHS.

EXECUTION BY ELECTRICITY.

A COMMITTEE appointed by the Medico-legal Society to inquire into the methods proper to be pursued in the execution of criminals by electricity was to make a report on Wednesday evening, the 12th inst. We have been favored with a printed copy of the report, and we must say that it shows evidence of much ingenuity and carefulness. It recommends the use of a dynamo capable of generating an electro-motive force of at least 3,000 volts, and the employment of an alternating current of a potential of from 1,000 to 1,500 volts, according to the resistance of the criminal (to be estimated, we presume, from his size), the alternations to be not fewer than 300 to the second, and the current to be passed from 15 to 30 seconds. It is thought that the sitting posture will prove preferable, with one electrode applied to the head and the other over the vertebral column, but it is admitted that greater simplicity and equal efficiency may perhaps be secured by the use of wristlet electrodes.

THE NAVAL MEDICAL SERVICE.

It appears by the "Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy" for the year ending October 25, 1888, that there seems to be no immediate prospect of legislation making the medical service of the navy attractive enough to lead to the filling of the vacancies in the corps, which are now eleven in number. This is a state of things that is very much to be regretted, and one to which we have more than once alluded. The difficulty continues in spite of the almost continuous session of an examining board for several years past. Unless Congress soon takes the only proper course open to it—that of improving the condition of assistant surgeons in rank and pay, as the bureau has repeatedly recommended—it is only a question of time as to a lowering of the standard in the admission examinations, an alternative that Surgeon-General Browne most properly deprecates. If that step has to be taken, the navy will shortly find itself officered by incompetents so far as the medical corps is concerned.

TESTIMONY IN CASES OF LUNACY.

A FEW years ago a man was adjudged insane before a magistrate on the testimony of two physicians. He afterward

brought an action against the magistrate and the physicians in one of the courts of this State. A decision having been given against him, he appealed to a higher court, and that tribunal, while sustaining the decision as to the magistrate, has reversed it as to the physicians and rendered judgment for the plaintiff. Whatever may be thought of the justice of this decision, its tendency will undoubtedly be to make physicians hesitate to testify to a person's insanity. If undue conservatism is the result, the medical profession can not be blamed.

THE LADIES' HEALTH PROTECTIVE ASSOCIATION.

WE are glad to see that this vigorous and commendable organization is likely to meet with co-operation on the part of the Board of Health in its efforts to bring about the destruction of garbage by combustion. That its members are willing to put their own shoulders to the wheel is shown by their having undertaken at their own expense an examination of the crematories in various other cities. It is to be hoped, too, that they will finally prevail upon the Police Commissioners to appoint matrons for the station-houses, a step that has already been authorized by the Legislature.

SUDDEN DEATH IN PLEURISY AND AFTER THORACOCENTESIS.

THE question of the cause of the occasional occurrence of sudden death in the course of pleurisy, attributed by Bartels and others to a sharp curvature of the vena cava inferior, has recently been investigated anew by Dr. Oscar Hagen-Torn, whose article on the subject, originally published in the "Archiv für pathologische Anatomie und Physiologie und für klinische Medizin," is summarized by Dr. Goldschmidt in the "Centralblatt für klinische Medizin." Hagen-Torn's conclusion is that death in the course of a rapid pleuritic effusion, as well as after tapping the chest, is due to interference with the action of the heart as a result of diminished intrathoracic inspiratory pressure (increased "negative pressure"). When puncture needs to be performed under circumstances indicating danger of sudden death—such as decided cyanosis, a low situation of the diaphragm, etc.—it is well, in the author's opinion, to bind a pillow to the abdomen, as after tapping of the peritoneal cavity.

TREPHINING OF THE STERNUM.

IN the "Lancet" for November 3d Mr. Charles A. Ballance, of the West London Hospital, gives an interesting account of a case of purulent collection in the anterior mediastinum in which he trephined the gladiolus at two different levels, and connected the two apertures by removing the intervening portion of bone, whereby he was enabled to treat the posterior surface of the bone, which was found to be carious, as well as the wall of the pus-cavity. Eventually the patient, a lady, recovered perfectly. Mr. Ballance appends brief references to a number of cases of mediastinal disease in which surgical intervention has been of service, and closes with the proposition that the mediastinum is "fit ground for the exercise of the surgeon's art."

THE HORSE'S TAIL AS AN ANTISEPTIC ATOMIZER.

IN the December number of the "American Veterinary Review" Mr. P. Peters reports a case in which he removed a urethral calculus from a gelding by incision at a point about four inches below the anus. In the after-treatment the attendant was directed to steep the horse's tail two or three times a day in a solution of bichloride of mercury, so that "the horse

attended to the frequent dressing of the wound, purifying the air and surrounding objects himself."

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 11, 1888:

DISEASES.	Week ending Dec. 4.		Week ending Dec. 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	18	4	23	7
Scarlet fever.....	171	28	164	31
Cerebro-spinal meningitis...	1	2	0	0
Measles.....	295	13	351	23
Diphtheria.....	111	26	136	32
Small-pox.....	1	0	1	0

The Health of New York City.—During the four weeks ending Tuesday, December 11th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 77 cases and 25 deaths; scarlet fever, 613 cases and 107 deaths; cerebro-spinal meningitis, 3 cases and 2 deaths; measles, 1,230 cases and 51 deaths; diphtheria, 460 cases and 127 deaths; small-pox, 3 cases and no deaths.

The Health of Kansas City, Mo.—For the two weeks ending Saturday, December 8th, according to the city physician's report, there were 61 deaths, including 2 from croup, 1 from diarrhœa, 2 from diphtheria, 3 from typhoid fever, 1 from typho-malarial fever, 1 from marasmus, and 2 from meningitis. The death-rate for the two weeks was 10.1 and 7.5 in a thousand of the population.

The Southern Surgical and Gynæcological Association held its first annual meeting last week in Birmingham, Alabama. The programme, which we have already published, was closely carried out, and the meeting was in every way creditable and profitable. Officers for the ensuing year were elected as follows: President, Dr. Hunter McGuire, of Richmond; vice-presidents, Dr. W. O. Roberts, of Louisville, and Dr. Bedford Brown, of Alexandria; judicial council, Dr. J. S. Cain, Dr. W. T. Briggs, and Dr. V. O. Hordon, of Nashville, Dr. J. M. Taylor, of Corinth, Miss., and Dr. D. Ford, of Augusta, Ga.; publication committee, Dr. W. B. Rogers, of Memphis, and Dr. V. O. Hordon, of Nashville. It was voted to hold the next meeting in Nashville, beginning on the second Tuesday in November, 1889.

The Jefferson Medical College Hospital.—By the courtesy of the Philadelphia "Polyclinic" we learn that Dr. Henry Leffmann has been elected pathological chemist at the hospital. No teaching duties are connected with the position, but it has been instituted to permit of regular investigations in medical chemistry in the clinical work of the hospital.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 2 to December 8, 1888:*

WILLIAMS, JOHN W., Major and Surgeon, is hereby relieved from further duty with the battalion of the Second Artillery, at Fort Wadsworth, New York Harbor, and will proceed to join his permanent station, Jackson Barracks, Louisiana. Par. 3, S. O. 256, Headquarters Division of the Atlantic, Governor's Island, New York city, December 5, 1888.

BALL, ROBERT R., First Lieutenant and Assistant Surgeon. By direction of the Secretary of War the leave of absence granted in Special Orders No. 129, October 18, 1888, De-

partment of the Missouri, is extended one month. Par. 11, S. O. 279, A. G. O., Washington, November 30, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 8, 1888:*

BRANSFORD, J. F., Surgeon. Detached from the Smithsonian Institution and granted six months' leave, with permission to go abroad.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending December 8, 1888:*

STONER, G. W., Surgeon. When relieved, to proceed to Detroit, Mich., and assume charge of the Service. November 26, 1888. Granted leave of absence for thirty days. November 28, 1888.

CARMICHAEL, D. A., Passed Assistant Surgeon. Granted leave of absence for thirty days. November 27, 1888. Relieved from duty at Washington, D. C., and ordered to Marine Hospital, Wilmington, N. C. December 3, 1888.

DEVAN, S. C., Passed Assistant Surgeon. Detailed as Attending Surgeon and acting Chief Clerk, Marine-Hospital Bureau. December 3, 1888. Granted leave of absence for eight days. December 8, 1888.

URQUHART, F. M., Passed Assistant Surgeon. To proceed to Evansville, Ind., for temporary duty. November 30, 1888.

BROOKS, S. D., Passed Assistant Surgeon. Granted leave of absence for thirty days. December 8, 1888.

NORMAN, SEATON, Assistant Surgeon. Ordered to examination for promotion. November 27, 1888. Granted leave of absence for twenty-five days. December 8, 1888.

FATTIO, J. B., Assistant Surgeon. Ordered to examination for promotion. December 7, 1888.

MAGRUDER, G. M., Assistant Surgeon. Relieved from special duty at Way Cross, Ga. December 8, 1888.

KINYOUN, J. J., Assistant Surgeon. Granted leave of absence for ten days. December 8, 1888.

VAUGHAN, G. T., Assistant Surgeon. Granted leave of absence for twenty-three days. December 8, 1888.

GUIÉRAS, G. M., Assistant Surgeon. To proceed to Savannah, Ga., for temporary duty. December 3, 1888.

Society Meetings for the Coming Week:

MONDAY, *December 17th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *December 18th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings, N. Y.; Ogdensburgh Medical Association; Baltimore Academy of Medicine.

WEDNESDAY, *December 19th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Allegany (quarterly) and Tompkins (semi-annual—Ithaca), N. Y.; New Jersey Academy of Medicine (Newark).

THURSDAY, *December 20th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *December 21st:* Chicago Gynæcological Society (annual); Baltimore Clinical Society.

SATURDAY, *December 22d:* New York Medical and Surgical Society (private).

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of October 2, 1888.

The President, Dr. GEORGE W. JACOBY, in the Chair.

Muscular Dystrophies.—Dr. B. SACHS presented the histories of three cases, comprising the original portion of a paper read before the American Neurological Association. (See pages 620 and 651.)

Dr. W. R. BIRDSALL had been interested in the types shown and was not inclined to question the author's diagnosis. The last case was, he thought, allied to the progressive muscular atrophy type rather than to that of an acute poliomyelitis. He thought, however, that there might be grades between the two; that there was no sharp line of demarkation between them. The former presented the characters of a degeneration, while the latter was an acute inflammatory condition which might involve not only the gray matter, but extend to the neighboring tracts. The speaker had a case in mind diagnosticated as acute inflammatory poliomyelitis. There was involvement of the muscles of the anterior and posterior aspects of the thigh, with slight affection of the anterior tibial group, and exaggerated reflex, showing extension to the lateral column. In the speaker's opinion, the different varieties of atrophy represented grades rather than distinct pathological entities. The fact that the atrophy in one case had affected an arm and a leg, in one was hemiplegic and in another paraplegic, should not blind one to the possibility that the pathological processes might be the same. In the present state of our histological knowledge, he thought that we were not even able to separate cases into those of myopathic and those of myelopathic origin. The number of the cases was meager and our methods of examination were not calculated to reveal minor degrees of atrophy. In the muscles, nerves, and cord it might be possible to have a gradual destruction and regeneration going on which would escape detection. The value of the electric reaction was equally open to doubt. If fibers degenerated one by one, it was probable that the reaction would remain normal until the number of atrophied fibers had attained a certain grade. The degeneration reaction would in any case be interfered with by the normal reaction of the healthy fibers. The question was whether there was great uniformity in these various types or great diversity; he favored the latter, the types running into each other.

Dr. MARY PUTNAM JACOBI suggested that the gluteal muscles had been unaffected in the second case presented. This accounted for the lack of the usual difficulty in getting up from the floor.

Dr. SACHS was of the same opinion. He had referred to the point because Dr. Gowers had mentioned the symptom as pathognomonic.

Dr. C. L. DANA referred to a case of pseudo-hypertrophy in which the disease had advanced from the calves to the thighs and thence to the shoulder girdle. There was slight hypertrophy of the forearm, the part said to be unaffected in Erb's form. The fundamental distinction between the symptoms of chronic anterior poliomyelitis and those of progressive muscular atrophy was the retrogressive or stationary character of the former and the progressive character of the latter. It was difficult to criticise the diagnosis in Dr. Sachs's last case. He would suggest that a careful examination of the urine be made for lead. A number of cases of anterior poliomyelitis in children had been recently ascribed to lead.

Dr. L. C. GRAY would, upon *a priori* reasoning, decide that Case III was one of chronic anterior poliomyelitis, but anterior-horn myelitis was, as had been suggested, retrogressive.

Muscular atrophy could be, he thought, divided into that of spinal and peripheral origin; of the latter, however, we must distinguish between that arising in the muscles and that due to peripheral neuritis. The results of treatment varied. There were cases which, with rest in bed, faradism, and gentle massage, improved, while other cases were unaffected by treatment. He thought that the former were spinal while the latter were peripheral, either neural or muscular, in origin. Formerly the diagnosis of a central or peripheral origin had been determined by the presence or absence of the reaction of degeneration. Now confusion surrounded this test also. The speaker inquired in regard to opinion upon this point. Was the degeneration reaction present only where the muscles were degenerated?

Dr. SACHS was pleased that Dr. Birdsall, who had not heard his paper in Washington, had been in substantial agreement with it. While there was diversity of types, there was no anatomical distinction between pseudo-hypertrophy and atrophy. The primary and spinal muscular dystrophies were distinguished by their symptoms. The primary affection occurred early; there was absence of fibrillary contractions, and there was absence of the reaction of degeneration. This group included pseudo-hypertrophy, Erb's type, and that of Landouzy and Déjérine.

Dr. GRAY begged to refer to a case recorded by Schultze, which had been assumed to be primary, but in which there had been found changes in the cord.

Dr. SACHS explained that the change referred to was independent of and unconnected with the muscular symptoms. It was in a part of the cord not connected with the muscles affected. He suggested that in Dr. Dana's case the atrophy in the right arm might have given rise to a fictitious appearance of hypertrophy in the forearm.

Dr. DANA added that the muscles had also the peculiar feel of pseudo-hypertrophy.

Dr. SACHS did not question Dr. Dana's diagnosis. He believed that all present had agreed upon the desirability of getting rid of the present classification upon anatomical distribution of the hypertrophy or atrophy. He had retained the term "peroneal form" for convenience only.

Othæmatoma or Insane Ear.—Dr. M. D. FIELD read a paper with this title. The title referred to a shrunken, shriveled condition, preceded by a period of active congestion, during which the organ was swollen, hot, and very painful. Between the cartilage and the perichondrium there was effused a sero-sanguinolent fluid, which might become purulent. This was absorbed, or rupture occurred, with healing and the deformity described. The deformity was not uncommon among the insane. It had been attributed to trophic change. The most general opinion had been that othæmatoma was characteristic only of chronic cases, and usually indicated an incurable condition. The question of a traumatic origin had received some attention. It had been remarked that a Greek statue represented a boxer with this deformity. The author could not recall the reference. It had been said to result in boys from the violence of the game of foot-ball. It had also been observed among soldiers.

The author had had under his care the case of a professional pugilist who had presented the deformity in question. Upon directing his attention to it, the man had remarked that it had resulted from a blow upon the head, and that it was common in his profession; that he knew as many as a hundred men similarly injured. Arrangements had been made with this man to be present at the meeting. He had been unable to come, but had sent a substitute. Several undersized professional pugilists were exhibited—all presenting the deformity. It could be added that only one had ever been in an asylum. This one had

been in for delirium tremens. It was evident that the insane ear might proceed from traumatism, also that it was more common than was generally supposed.

Dr. F. PETERSON had seen the condition frequently in the insane, and believed that it was always due to traumatism. It was more frequent among the insane, probably on account of the necessity for restraint, also because the insane were apt to injure themselves in many ways. He also believed that the changes in the walls of the vessels in insanity predisposed to the result. Retrograde metamorphosis of the cartilage and perichondrium, like that of senility, was common in general paresis and other varieties of chronic insanity.

Dr. R. L. PARSONS exhibited a cast of othæmatoma in the recent state taken some years ago. He had always considered the condition a result of nerve degeneration. The exhibition this evening had, however, demonstrated that it might result from traumatism alone.

Dr. DOUGLAS had seen a considerable number of instances of the insane ear, and thought that it had been due to violence in every instance, either from the attendants, from other patients, or from the sufferer himself.

Dr. INGRAM could corroborate this statement. The insane had the habit of rubbing the ears, which might account for some cases. He could add to Dr. Field's record that of a case of recovery after double othæmatoma during an active maniacal attack. With improvement of the mental condition there was improvement in the ear. Upon recovery, there was diminution in the size of the ear, but no deformity.

Dr. PETERSON added that the reference to the Greek statue had been made by Fürstner ("Arch. f. Psych.," iii).

Dr. FIELD referred to the case reported by Dr. Hun; after the patient had been struck with a broomstick, the hæmatoma appeared upon the opposite ear. Dr. Hun had cited the case as an instance in which traumatism could not have been the direct cause.

MEDICAL SOCIETY OF VIRGINIA.

Nineteenth Annual Meeting, held at Norfolk, on Tuesday, Wednesday, Thursday, and Friday, October 23, 24, 25, and 26, 1888.

The President, Dr. BENJAMIN BLACKFORD, of Lynchburg, in the Chair;

Dr. LANDON B. EDWARDS, of Richmond, Recording Secretary.

(Concluded from page 584.)

Report on Advances in the Practice of Medicine.—Dr. WILLIAM D. HOOPER, of Liberty, gave a running account of the progress of the germ theory in the last twelve months, saying the advance had been in rather a "retrograde" direction. Sternberg had proved that Freire's inoculations for yellow fever were a failure, and that M. Gibier had not discovered the true germ of that disease, but thought he himself had. Pasteur's patients were dying with hydrophobia, but Koch's tubercle bacillus was accepted as true by a recent congress for the study of tuberculosis which had met in Paris. Pasteur thought M. Gamalier, of Odessa, had discovered a true inoculation for cholera, and had referred his communication to the prize committee of the Academy of Sciences. The reporter also gave a description of a new method of treating ulcerated bladder with enlarged prostate by repeated irrigation of that organ with warm water holding iodoform in suspension. He used a Y-shaped tube five inches long, as he found it was not necessary to have a double catheter for that purpose. He reported two cases—the first in a man, aged seventy-eight, relieved on his death-bed after all other means had failed; the other patient, a gentleman aged sev-

enty-five years, had been cured, as he slept all night without emptying the bladder, and rode horseback during the day.

Cultivation of Vocal Music in our Schools as One of the Means of preventing Phthisis was the title of a suggestive paper by Dr. C. E. BUSEY, of Lynchburg. He stated as a well-known fact that those nations which were given to the cultivation of vocal music were strong, vigorous races, with broad, expansive chests. If an hour was daily devoted in our public schools to the development of vocal music there would not be the sad spectacle of the drooping, withered, hollow-chested, round-shouldered children. There was too great a tendency to sacrifice physical health upon the altar of learning. Vocal music was a gymnastic exercise of the lungs by development of the lung-tissue itself. The lungs in improved breeds of cattle, which naturally took little exercise and were domiciled much of the time, were considerably reduced in size when compared with those of animals running at liberty; and so it was with the human race, which led inactive lives from civilization. Phthisis generally began at the apices of the lungs, because these parts were more inactive, and because the bronchial tubes were so arranged that they carried the inspired air with greater facility to the bases than to the apices. During inactivity a person would ordinarily breathe about 480 cubic inches of air in a minute. If he walked at the rate of six miles an hour he would breathe 3,260 cubic inches. In singing, this increased more than in walking, as to sing well required all the capacity of the lungs. The instructor of vocal music, in addition to his musical education, should understand the anatomy and physiology of the respiratory organs.

Mysticism in the Developments of Medicine was the title of a paper presented by Dr. M. A. RUST, of Richmond, in which he said that the science of medicine to-day embraced surgery as well as medicine. The modern surgeon was a scientific physician endowed with manual skill. But surgery and medicine had not developed from the same germ. The traumatic injuries must needs have engaged our progenitors' attention at an epoch when brain evolution was not so far advanced as to enable them to take cognizance of internal disturbances; thus we likewise saw our domestic animals bestow some kind of treatment on external injuries. Now, if we followed surgical art through all its stages, we should find its work ever to be tangible work—ever free from mystery. It was different in regard to internal diseases. As soon as brain evolution had reached the point of manifesting itself by some kind of reason or thought, the internal functional disturbances, for which no visible cause existed, were attributed to the action of some occult and supernatural power. Wherever we met man, even in the lowest state of savagery, we found the idea of this power evolved. Primitive man, as little as the savage of to-day, was capable of dealing with it. But there arose a particular class of men endowed with superhuman qualities, and fitted for interposing between mankind and good and evil spirits. Priestcraft and the healing art coalesced into one and the same sacred profession, of which the actually existing and ministering medicine-man in the Indian Territory or on the banks of the Congo was a living prototype. The healing art still bore the vestiges of its descent: there still existed a faint family likeness between the professional healer and the medicine-man, priest, sorcerer, or juggler. The mysticism of mediæval medicine took shape and color through the co-operation of various factors.

Foremost stood the Judaic-Christian devil, who followed in the wake of advancing and triumphant Christianity. Wherever the cross was planted, there the upas tree of diabolism, of demoniacal nosology, of pathology and therapeutics, of witchcraft, developed and branched out into gigantic dimensions, infecting Christianity with a most baneful mental epidemic.

While surgery was left in the hands of the barber-surgeon, the healing art became the monopoly of monks and priests; theurgy and thaumaturgy were all-pervading. Even when, after the revival of letters and the foundation of universities, the healing monopoly had been wrenched from the priestly grasp, mysticism continued to cleave to the healing art, and was as yet not extinct. At a time when, among the generality of men, an all-embracing culture was advancing with long and rapid strides, the field of the knowledge of life and health still lay overgrown with the weeds of superstition and darkened by the fogs of ignorance. The implicit belief in drugs of all-sorts, from all sources, was still unshaken; the appetite for nostrums insatiable; the magnitude of the consumption appalling; the consequences, in many instances, disastrous. Disease was regarded as an inimical entity which had to be fought with all earthly and unearthly weapons; for every special disease an herb or a mineral must exist that would heal it; greatness was bestowed upon the healer who could make the greatest fuss and stir. Withal, the relations of surroundings to life and health, the simplest hygienic rules, were ignored or recklessly disregarded. However, the time was fast approaching when hygienic and preventive medicine would supersede the methods of the old healing art, when the physician would minister as a public functionary of the highest order, invested with the guardianship of the well-being and happiness of the human race, present and future. Before this change could take place public opinion must be educated; man must be awakened to the momentous cogitation that he held in his hands the power over his destiny and the destiny of his offspring. It was the physician, and the physician only, who could lift public conceptions of life, health, and disease to this higher level. In order to fulfill his vocation of educating the public, of controlling and regulating the relations between human life and the outer world, he must acquire an exhaustive knowledge of all the surroundings of man—a knowledge of the whole of nature. Without it, he must disastrously fail. No doubt the scent of burnt offerings operated propitiously on the gods; but, said Goethe, "if the priest has a cold in the head, the gods can not smell."

What is the Duty of a Doctor to his Patient suffering from Malignant Disease?—Dr. WILLIAM W. PARKER, of Richmond, presented a paper with this title, and reached the following conclusions: 1. In the treatment of cancer and other necessarily fatal diseases it was the duty of the doctor to mislead and deceive his patient as long as he could as to the nature and fatal ending of the disease. 2. It was also his duty, in other maladies not fatal, often to deceive his patient both as to the medicine used and also as to his real opinion of the case. Such deception was also a daily occurrence, and was practiced by all doctors. 3. This mode of proceeding was not at all agreeable to the doctor, and was a great strain upon his nervous system; and the only motive for it must be the good of his patient. 4. Deception had always been recognized as lawful and right in war, and had been highly commended by the wisest men. 5. In this deception, in the case of both the doctor and the general, the motive must be of the highest and most unselfish character. 6. In many of the great crises of life one virtue had for a time to be in abeyance, and yield to other greater virtues and duties. Human life was daily saved by withholding, if needful by deceit, sad news that would be apt to kill by shock. 7. It was plainly the duty of the doctor to prolong the life of his patient, and in every case and by all means in his power to render him comfortable in body and mind. 8. The utmost frankness should be practiced by the doctor in his intercourse with the sick person's friends, and was demanded alike by regard for his own reputation and for the rights of his patient. 9. It was the doctor's

duty, in all cases of malignant disease, to consent to a consultation, if not to suggest it. 10. Hope was one of the most precious instincts or faculties of the soul, and it was the doctor's duty to cherish it to the last. As every patient had the desire to live, "the expectation," the other element of hope, must be cultivated by the doctor. 11. However desperate the case might be, it was the doctor's duty to stand by his patient, and cheer him to the last.

In response to numerous calls, Dr. John B. Hamilton, of Washington, Surgeon-General of the Marine-Hospital Service, said that he could not hope to say anything in the nature of instruction to this old and distinguished association, especially as what he should say was entirely unpremeditated and without preparation. But in epidemiology, history was always interesting, and he would briefly give the outline history of the epidemic of yellow fever now existing in the State of Florida.

Last year the yellow fever had appeared in Key West in the family of a restaurant keeper by the name of Baker. It appeared that one Bolio family—who had kept hotels in Havana in various places, the last being called the *Quinta Avenida* (Fifth Avenue Hotel)—unfortunately for Florida, emigrated to Key West. Their household effects, under the regulations governing the regular lines of steamers, could not be shipped by them, so they shipped these effects, consisting of bedding and various articles of furniture, by an irregular "tramp," not now running, called the Cochran. There was no objection officially made at Key West, and these effects were landed and stored above Baker's restaurant. The Baker family died of the fever, and thus the fever started and rapidly became epidemic. The Government, under the operation of that section of the statutes forbidding interference with local authorities, did nothing except, on request of the Governor, to aid the local board, establish a dispensary, and pay the expenses of the city hospital. To provide for the speedy depopulation of the city, a refugee camp was established at Egmont Key at the mouth of Tampa Bay. No case from Egmont Key communicated the disease.

The first cases in Tampa were kept secret from August to October 21st. A family of Italians by the name of Turk, fruit dealers, brought the fever into Tampa. The steamers had refused, under orders from the Hillsborough County Board of Health, to bring fruit from Havana or Key West. These Italians, finding it impossible to continue in business, set up a smuggling line and brought fruit by way of Punta Gorda Bay, and overland to Tampa. For this purpose the man Turk and his assistant Peep, or "Pete," made frequent surreptitious visits to Key West while the disease was there epidemic, and blankets were purchased in the infected city and used while on the overland trip and brought to Tampa. It was a significant fact that the whole family of these Italians were the first taken sick, but they were not publicly known to have been out of the town, although the fact was now known. The measures taken by the Government were simply to conform to the wishes of the Governor to aid the Hillsborough County Board of Health. The duty of preventing the spread of the disease was undertaken by the Florida State Protective Association, an organization consisting of one representative from each County board of health, under the presidency of Dr. King Wyly, of Sanford. In December the association raised the quarantine against Tampa. The County Board of Health asserted that the disease had disappeared, but, unfortunately, the disease had not been stamped out, and, although the cases of fever lingered all winter in Tampa, its existence there was bitterly denied.

From Tampa the disease spread to Plant City, Manatee, and other places, and it was now believed that the fever had been at Jacksonville as early as February. Dr. Potts treated cases in Bay Street in June, and there were probably cases continuously

until the formal announcement was made. The speaker then described the Governmental measures taken to prevent the spread of the disease, and referred in detail to the marked success of the operations at Camp Perry.

Report on Psychology and Neurology.—Dr. RANDOLPH BARKSDALE, of Petersburg, in his report sketched the history of the treatment of insanity: Over two thousand years ago insanity had been believed to be a state of being possessed by the devil, and the treatment had been directed toward driving the devil out and punishing the person for letting the devil in. Hippocrates had been the first to cast off such superstition, and announced that insanity was the result of disease of the brain; that the mind—the soul—could not be diseased; and his doctrines prevailed and resulted in improved treatment. But after the fall of the Roman Empire these doctrines had passed away. Again the insane had become victims of persecution and punishment. It had not been until 1795 that Pinel had inaugurated the reformation school of treatment which prevailed to this day. He had again taught that insanity was a disease, and that the insane were entitled to all the care of the skilled physician and nurse. Since then improvements had been almost yearly made in the care and treatment of the insane, as of other diseases. Under the head of *neurology* Dr. Barksdale mentioned some approved uses of electricity in medicine, and also noted approvingly some advances made by Seguin and others with reference to the localization of functions of the brain, which might help the surgeon materially in selecting the site for the trephine in certain obscure brain injuries and diseases.

Report on Obstetrics.—Dr. G. McDONALD, of Union, West Virginia, in his report spoke of the value of asepsis and antiseptics in midwifery, repeating the precautions that had time and again been repeated in books, journals, etc. As to anæsthetics in labor, chloral hydrate in fifteen-grain doses, every half-hour or so, was better during the early stages of labor than chloroform, which latter should be reserved for the final throes. The placenta was best expelled by Credé's method. It had been recommended to pack the cavity of the uterus with iodoform gauze in cases of post-partum hæmorrhage after the failure of ergot, hot or cold injections, etc.; but, as a rule, we should empty the uterus promptly and cause tonic contraction of the organ. In cases of placenta prævia, the tampon might undoubtedly be used to gain time for sufficient dilatation of the os uteri in order to use the hand, etc. When a case of occipito-posterior position was seen before rupture of the membranes, and before the head and shoulders became impacted in the pelvis, the aseptic hand should be introduced (the patient under chloroform), the head caught between the fingers and thumb, and the occiput rotated forward, when the labor might proceed as in a normal case. In regard to face presentations, when the chin fell into the hollow of the sacrum, the chin should be brought forward and held there until expelled. The Veit-Smellie method was advocated for extraction of the after-coming head in breech cases. The importance of laparotomy, etc., in rare instances in obstetrics was dwelt upon.

The Conduct of Pregnant Women before and after Delivery.—Dr. WILLIAM L. ROBINSON, of Danville, presented a paper in which he considered—1. The causes and treatment of the nausea of pregnancy. 2. The effects of granulations of the cervix uteri and vagina before delivery, and the dangerous complications resulting therefrom during delivery. 3. The causes and treatment of constipation during pregnancy. 4. The proper hygienic and aseptic precautions that should be taken before and after confinement. 5. The causes of post-partum pains unduly protracted, the dangers to be anticipated therefrom, and the proper means of correcting the trouble. 6. The causes and treatment of post-partum hæmorrhage. 7. While antipyrine

controlled after-pains, did it not unduly diminish the normal discharges? 8. Chorea of pregnancy, with the citation of several interesting cases.

Report on Diseases of Women.—Dr. GEORGE B. MCCORKLE, of Covington, presented the report. In regard to electricity, he presented the conclusions of Dr. Martin, of Chicago, as to its use in the treatment of fibroids of the uterus. It was free from danger, was absolutely painless, invariably checked excessive hæmorrhage, rapidly reduced the size of the tumors, and stopped neuralgic pains; its use was based upon the principle of the exact dosage of electricity. Electricity had likewise proved useful in removing tumors from the female breast in the practice of Dr. Garnett, of Berlin. It had also been useful in increasing the flow of milk in mothers' breasts. Dr. Byford used electricity in paralysis of the bladder after inflammation had subsided. Dr. Rockwell had successfully used it in amenorrhœa. Even in a case of complete extrusion of the uterus electricity had been successfully resorted to to retain the organ in place after its reposition. Operative procedures seemed to be taking the place of pessaries. Dilating and curetting the uterine cavity for numerous growths on its inner surface, etc., were again becoming very popular.

Report on Diseases of Children.—Dr. OSCAR WILEY, of Salem, presented the report. He remarked on the marked excitability of infants and children, and then stated that their diseases were greatly modified by the nervous impressibility of the subjects. The severity of symptoms, however, furnished no safe guide as to the severity of the disease. For instance, a convulsion, than which we had no more hideous symptom or sign, might be the result of a centric or eccentric lesion; it might be innocent in its effects, due entirely to an easily removable cause, or it might result from some organic changes which would increase from day to day in severity. Intercurrent complications had to be carefully watched for in diseases of children. Stress should be laid on the hygienic and dietetic habits. He closed with some pertinent remarks on dietetic therapeutics.

Report on Ophthalmology.—Dr. ALFRED C. PALMER, of Norfolk, read the report. He divided his subject so as to speak systematically of whatever concerned (1) the lids, lacrymal apparatus, and orbit; (2) the cornea, conjunctiva, and sclera; (3) accommodation, refraction, and the motor apparatus; (4) the uveal tract, vitreous, aqueous, and lens; (5) the retina and optic nerve.

Report on Otology and Laryngology.—Dr. JOHN T. FRANCIS, of Norfolk, presented the report. He first spoke of the pathology of aural vertigo, and then, with reference to the treatment of otorrhœa, said that lactic acid attacked only the fungous growths, diminished the secretion, and caused the odor to disappear. Pilocarpine was also recommended. Photoxylin (twenty-per-cent. solution) had closed a perforation in the membrana tympani. The ear was first syringed with boric-acid solution, and dried with absorbent cotton. Then the edges of the perforation were painted several times until the opening was covered. He reported a case of serious injury to the ear as a result of simply syringing that organ for a purulent discharge. The remainder of the report was on laryngology, and spoke mostly of laryngeal tumors, tracheotomy, chronic and atrophic rhinitis, hay fever, etc.

Enlarged Tonsils—What shall we do with them?—Dr. CHARLES M. SHIELDS, of Richmond, read a paper with this title. After a brief discussion of the necessity of removing hypertrophied tonsils, and answering in the negative the question, "Can they be removed by the application of astringents, absorbents, or mild caustics, or the hypodermic injection of ergotin, iodine, etc.?" the speaker presented the comparative merits of the amygdalotome and galvano-cautery, stating

that he now only used the amygdalotome in young children, or where the tonsils were of the soft variety, where there was no danger of hæmorrhage, on account of the prompt contraction of the blood-vessels. He had never seen or heard of fatal hæmorrhage following the amputation of the tonsils in children, for the same reason. In adults, where the tonsils were of the hard, fibrous variety, although dangerous hæmorrhage only occurred about once in 500 cases, he thought that risk sufficient to make us discard the instrument if a safer and just as efficient method was at hand. The galvano-cautery fulfilled these indications. From four to eight sittings were sufficient to melt down large tonsils, and he touched six or seven points at one sitting. If a ten-per-cent. solution of cocaine was first applied, patients did not complain of pain. He had observed no tendency to recurrence after removal by this method. He summed up as follows: In all cases except in young children, or where the tonsil was very soft, the galvano-cautery method was to be preferred, because, 1st, the tonsil could be more nearly restored to its normal proportions; 2d, irregularly shaped masses could be removed; 3d, the effects seemed to be more permanent; 4th, it was devoid of danger.

Improved Means of Diagnosis and Surgical Treatment of Nasal and Throat Troubles.—DR. JOSEPH A. WHITE, of Richmond, read a paper in which he described a number of new inventions made by himself, both original instruments and improvements in old ones. Those of chief importance, as he regarded them, were (1) a post-nasal speculum, or self-retaining palate retractor, which had been described in the "Journal of the American Medical Association," and also in the "Virginia Medical Monthly"; (2) a self-retaining tongue depressor, now presented for the first time to the profession; and (3) a ratchet snare and galvano-cautery handle, described last month in the Philadelphia "Medical News." The tongue depressor invented by Dr. White, once applied, could not be displaced by the motion of the patient's tongue, while it was firmly pressed down on the floor of the mouth. It exposed the pharyngeal wall perfectly and allowed of the free use of the rhinoscopic mirror while the post-nasal speculum was in position.

Book Notices

Diseases of the Skin. Their Description, Pathology, Diagnosis, and Treatment. By H. RADCLIFFE CROCKER, M. D. Lond., Fellow of the Royal College of Physicians of London, etc. With 76 Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvii-746. [Price, \$5.50.]

It has long been a matter of some surprise that England has produced only two recent books upon the diseases of the skin which may be classed as treatises. Wilson's large book dates back to the dark ages of dermatology, and his "Cutaneous Medicine," though of later date, is for the use of students. Tilbury Fox's treatise, though a most valuable work, was written in 1864, and the latest editions are not very recent. Germany has given us Kaposi, Behrend, von Ziemssen, Lesser, and Hans Hebra; France, Hardy and Guibout; Scotland, Anderson and Jamieson; and the United States, Duhring, Hyde, Robinson, and Shoemaker; England has kept silence. But now the silence is broken, and when we read this book of Crocker's we can but think that it was worth while for England to keep silence so long if by so doing she has been able to give us so good a work. Its author has been long and favorably known as an able contributor to medical-journal literature, and he is

one of the most highly esteemed dermatologists in London. By this book he should win a host of admirers wherever good books are read.

It commends itself by its very honesty. What the author believes, he says; and if he does not know a thing, he says that he does not know. We know that he is a man of large experience in the care of skin cases, as he is the dermatologist to University College Hospital. That he is an acute and careful observer and a systematic recorder of his observations his book teaches us. As one of the physicians to the East London Hospital for Children he has enjoyed special advantages in the study of the skin diseases of children, and in the work now before us special attention is given to the symptomatology of such diseases; a unique feature of the book. He is also a skilled pathologist. Nearly all the drawings from microscopical sections are his own, and very beautiful they are as works of art. Another special and commendable feature of the book is that the general pathology of the various diseases is printed in the ordinary type of the book, while the minute anatomy is given in smaller type. This will be appreciated by many readers. Great prominence is given to constitutional conditions as causes of skin diseases, and to the importance of treating the patient quite as much as his cutaneous disorder. Dietetic matters and general regimen are insisted upon, and wisely. The definitions of the terms used in dermatology are good and useful. The general practitioner often fails to convey a proper idea of a disease to his consultant, because he does not know the correct terms to use in describing a case. The chapters on ætiology and treatment are excellent. Arsenic is deposed from its old-time supremacy and put in its proper place as a drug that is useful only at times and in certain conditions. Ichthyol is damned with faint praise. The author condemns, and justly, the use of poultices for the removal of crusts. He has a special fondness for calamine lotion—composed of calamine, oxide of zinc, glycerin, and rose-water—as an application for erythema, eczema, and most hyperæmic conditions. Counter-irritation over the vaso-motor centers is recommended in chronic eczema, and we have found it useful in one case in which we followed the author's advice. Under hydroa he places dermatitis herpetiformis and herpes gestationis. In the treatment of psoriasis, turpentine is highly recommended, both internally in doses of ten carried to thirty drops three times a day, and externally. He regards lichen ruber acuminatus and lichen planus as the same disease, the difference of clinical appearances being due to the different seat of the pathological process in the two forms; about the hair follicles in the one and the sweat-pores in the other. Sulphate of magnesium he has found useful for warts when taken by the mouth. Subcutaneous injections of mercury he regards as no more efficacious in syphilis than the same drug given by the mouth, and condemns them as both painful and troublesome to the patient. He does not accept as proved either the parasitic origin or the contagiousness of alopecia areata.

We would note the following as new terms added to our already burdened nomenclature: Dermatitis repens, conglomerative pustular perifolliculitis, atrophoderma pigmentosum, furunculus orientalis, and monilethrix.

In a work so carefully and admirably done as this one, it may seem ungracious to make any adverse criticism, but we notice that the use of sheet rubber in eczema scroti is not mentioned, and we are sure that in many cases it is one of the best methods of treatment. We are surprised to see that salt rheum and its German equivalent, *Salzfluss*, are omitted from the synonyms of eczema, angioma from those of vascular nævus, and pimples from those of acne.

The bullous form of impetigo contagiosa and dysidrosis of the

face receive no mention. Injuries do not figure as ætiological factors in zoster, and the use of the curette is not mentioned in the treatment of warts. We believe that the author is wrong in advising the withdrawal of the needle before the hair is loosened and leaves the follicle in the treatment of hirsuties by electrolysis. The H. is omitted from the name of our Fox, on page 171; Elliot is spelled with two t's instead of one, on page 179; and F. is used instead of T. in the name of Jackson, on page 605. Würzburg is probably meant, on page 232, not "Wursberg." There is one too many i's in the spelling of blepharadenitis, on page 410. We think that the book is marred by the use of such abbreviations in the text as W. C., P. M., B. P., and U. C. H., and that it would be well to drop the ancient spelling of plaister.

But the work is so excellent that these slight blemishes count as nothing. It is one of the most thorough treatises on the diseases of the skin that it has ever been our good fortune to review, and as such we heartily commend it to our readers.

A Treatise on Headache and Neuralgia, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep. By J. LEONARD CORNING, M. A., M. D., Consultant in Nervous Diseases to St. Francis Hospital, etc. Illustrated. New York: E. B. Treat, 1888. Pp. 10-15 to 231. [Price, \$2.75.]

WHILE there is much that is admirable in this book, it must be said that the different subjects are treated with unequal merit. Thus the chapters on headache are far less satisfactory than those on spinal irritation, and it would not seem to us that the author's classification of headaches was one which he would wish to be permanent. It would have been well to say more respecting the pathology of the various subjects treated. In respect to treatment, the author dwells largely upon various appliances and methods which he has devised, which are extremely creditable to him, and have been favorably received by the profession.

We do not think he has exercised sufficient caution in his advocacy of alcohol and morphine. Neurotic individuals, especially if they are somewhat weak-minded, find it extremely easy to shelter themselves behind a physician's prescription in gratifying a readily formed appetite for these useful but dangerous drugs.

Dr. Corning's writings are never obscure, and are therefore always readable, and we doubt not that many will find much satisfactory information in the work which has been thus briefly noticed.

A Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. LAUDER BRUNTON, M. D., D. Sc., F. R. S., Fellow of the Royal College of Physicians, Assistant Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital, London. Adapted to the United States Pharmacopœia. By FRANCIS H. WILLIAMS, M. D., Boston, Mass. Third Edition. Philadelphia: Lea Brothers & Co., 1888. Pp. 1-9 to 1261. [Price, \$5.50.]

WE are pleased to call the attention of both medical practitioners and medical students to the third edition of this admirable work. Unfortunately, the rapid exhaustion of the second edition prevented the author from making as many improvements in the present edition as we could have desired. His treatment of the connection between chemical constitution and physiological action is still too elementary. More space should have been devoted to it. Certain uses of drugs, such as that of antipyrine as a nervine and that of calomel as a diuretic, are not discussed in the light of the most recent investigations. The general index has been thoroughly revised, but the index of diseases and remedies—compiled from Dr. Potter's "Index," Na-

pheys's "Medical Therapeutics," and Neale's "Medical Digest"—is merely a suggestion of what it might be. Dr. Brunton attributes the appearance of "apis" in his list as a remedy for inflammation of the tonsils to an amanuensis's error, and humorously assures the homœopaths that, if any other like oversight has occurred, it was unintentional. He proceeds to show that homœopaths are wrong, not because they assert *similia similibus curantur*, a principle known to Hippocrates and recognized by him to be true in certain cases, but because they raise this principle to the rank of a universal law and believe that the diminution in the dose is compensated for by the potency conferred upon the drug by prolonged trituration. On the other hand, homœopathic doctrines have lessened the practice of polypharmacy and strengthened the modern tendency to allow the *vis medicatrix nature* free scope. After an introduction, in which the author defines materia medica and points out the supreme importance of rational therapeutics and the steady advances of prophylaxis and pharmacology, he devotes a section of the work to each of the following subjects: General pharmacology and therapeutics; general pharmacy, inorganic materia medica; organic materia medica; vegetable materia medica, almost entirely remodeled on Hooker's plan; and the animal kingdom. The chemical appendix, general index, index of diseases and remedies, and bibliographical index follow. The struggle for existence between microbes and the living organism, illustrated in the first edition by a single diagram of a bacillus and an amoeba, is fully illustrated in the third edition by ten woodcuts taken from Metschinoff's paper. Jackson's theories on the nervous system are illustrated by a diagram which, when covered with successive layers of thin paper, exemplifies the effect of anesthetics and narcotics in gradually destroying various faculties. Chapter IX, on the action of drugs on the organs of special sense, is very satisfactory. It contains a diagram of the nervous supply of the eye; another representing a section through the corneo-scleral region, ciliary body, and iris of a healthy eye and also of a glaucomatous eye; and a third diagram showing the position of the rods and pigment-cells in the retina of a frog. The chapter on antipyretics is fuller than in the first edition. "Some diagrams illustrating the pathology of fever and the mode of action of antipyretics have been introduced; but it is very difficult in the present state of our knowledge to deal satisfactorily with this subject." As in the past, Brunton's "Pharmacology" will be in the future of the greatest use to the medical profession.

The Ear and its Diseases. Being a Practical Contribution to the Study of Otology. By SAMUEL SEXTON, M. D., Aural Surgeon to the New York Eye and Ear Infirmary, etc. Edited by CHRISTOPHER J. COLLES, M. D., Assistant Aural Surgeon to the New York Eye and Ear Infirmary. With Numerous Illustrations. New York: William Wood & Co., 1888. Pp. xii-461.

IN this age of compilation, when the sole aim of each new book seems to be the recital of what has been done by every one except the author, and when anybody who has gained a smattering of a specialty thinks himself entitled to rush forth with into print and pose as an authority, mainly upon the strength of his reading, it is refreshing to find a book of real originality—one, namely, that is based neither upon borrowed opinions nor upon unsupported theory, but upon the solid ground of long-continued and intelligent personal observation. Such a book Dr. Sexton has produced in the volume before us. It presents the results derived from the careful study of some twenty thousand cases of aural disease occurring in the author's practice, about ten thousand of which have been carefully recorded and tabulated. These cases furnish a strong statistical

basis for his propositions and arguments, and with their presentation and discussion a large part of the book is taken up. It is not to be inferred from this that Dr. Sexton ignores the work of others. There is perhaps no otologist who is more conversant with the literature of his specialty, and, when the occasion offers, he makes free use of the works of contemporary and of by-gone writers. But he is above all things an observer, and the great value of his work lies in his observations there recorded, and in his deductions from them.

The book consists of four parts. The first contains a succinct account of the anatomy of the external ear and the drum-membrane and of the muscles which act upon them, together with a clear description of the relations between the nasopharynx and the tympanum and a brief chapter on the physiology of hearing. To the general practitioner, however, probably the most interesting portions of the book will be found in the second part, which is taken up with the ætiology of aural affections. Of special importance and value are the chapters upon catarrh of the upper air tract and upon oral irritation as causal factors in the production of ear disease, and very suggestive and full of truth are the shorter sections indicating the troubles induced by bathing, the use of the nasal douche, and other similar agencies. In the third part, which appeals more particularly to specialists, Dr. Sexton takes up in succession the principal affections of the middle ear. Before considering the inflammatory disorders of the tympanic cavity, he gives an exhaustive account of the injuries and wounds both of the external ear and of the tympanum, in which he has had an exceptionally great experience. This portion of the work occupies over a hundred pages, including forty devoted to *othæmatomata*, a space quite disproportionate to the importance of that subject. We are glad to see that in this connection the author gives extended notice to the lesions produced by blows upon the auricle, and very properly deprecates the barbarous habit of boxing the ears, which is still a prevalent method of infantile correction and which has led to disastrous and even fatal results.

The chapters on inflammation of the middle ear are preceded by a short but adequate account of the anatomy of the region, special attention being given to the relations existing between the atrium, the attic, and the antrum, which are of such practical importance in reference to the spread of inflammation from one part to another. The section upon catarrhal otitis media is worthy of all praise, the remarks upon the treatment being especially judicious and satisfactory. We wish, though, that Dr. Sexton had devoted a little more space to the consideration of that bugbear of otologists, chronic catarrhal otitis. In the article upon suppurative otitis media, which is very full and excellent, the author maintains his well-known conservative attitude in regard to the mastoid operation in threatened involvement of the brain. He also draws a strong distinction between the cases of purulent inflammation which are suitable for the treatment by insufflation of powders and those which are not, holding that such treatment is applicable only when we desire to convert the mucous membrane of the middle ear into a non-secreting (dermoid) structure. On both of these points many otologists will take issue with the author, although the deliberate statements of one who has had such large experience will necessarily command respect, if they do not produce conviction.

In the article on polypi we should have liked to see a little more said about the alcohol treatment, which in our own experience has had excellent results.

Quite interesting, both to the otologist and to the alienist, are the sections upon anomalies of audition and their effect upon the mind.

The third part of the book closes with an elaborate account of the radical operation for excision of the drum-head and ossicles, as a means either of checking inveterate suppuration or of improving the hearing in advanced cases of non-suppurative sclerosis. Twenty-nine cases of the former kind and seven of the latter are reported in detail, and the reports are deserving of careful study even by those who (to our thinking, unjustly) reprehend the operation as useless and unjustifiable.

The fourth part of the book comprises various miscellaneous articles, including some on subjects of much interest to the general profession, such as the question of the education of deaf-mutes, and that of deafness considered as a pensionable disability. One article—that upon the injurious effects of unskillful treatment—we wish could be read by every practitioner in the land. There is no truth which so urgently needs to be brought home to the minds of doctors and patients alike as the one, so often lost sight of, that meddling and ignorant interference with the eye or ear is apt to be followed by the most disastrous consequences.

It will be seen that Dr. Sexton's book is not a complete treatise upon ear diseases. Many subjects—such as obstruction and inflammation of the auditory canal, otomycosis, and the pathology and diagnosis of internal-ear disease—about which we should have liked to have the benefit of his experience, are not touched upon at all. Nevertheless, the subjects which are included comprise by far the most important and, generally speaking, the most common of aural maladies, and they are fully and ably presented; and the book, even with these omissions, certainly constitutes a most valuable contribution to otological literature.

BOOKS AND PAMPHLETS RECEIVED.

Should not the National Government defend our Ports against the National Enemy, Contagious Disease? By Benjamin Lee, A. M., M. D. Ph. D., etc. [Reprinted from the "Journal of the American Medical Association."]

Treatise on the Diseases of Women. For the Use of Students and Practitioners. By Alexander J. C. Skene, M. D., Professor of Gynecology in the Long Island College Hospital, Brooklyn, etc. With Two Hundred and Fifty-one Engravings and Nine Chromo-lithographs. New York: D. Appleton & Co., 1888. Pp. xiv+966. [Price, \$6.]

The Life-Insurance Examiner. A Practical Treatise upon Medical Examinations for Life Insurance. By Charles F. Stillman, M. S., M. D., etc. New York and Chicago: The "Spectator" Company, 1888. Pp. 6-7 to 187.

The Orthopædic Treatment of Paralysis of the Anterior Muscles of the Thigh. By A. B. Judson, M. D., New York. [Reprinted from the "Medical Record."]

Uterine Displacements and their Influence on the General Nervous System. By Francis H. Davenport, M. D., of Boston. (Read at the annual meeting of the Massachusetts Medical Society, June 12, 1888.)

Clinical Lectures on certain Diseases of the Nervous System. By Professor J. M. Charcot, Professor to the Faculty of Medicine of Paris, etc. Translated by A. P. Hurd, M. D., Newburyport, Mass. Detroit: George S. Davis, 1888. Pp. xxiv+155. [The Physicians' Leisure Library.]

The Dispensary of the United States of America. By Dr. George B. Wood and Dr. Franklin Bache. Sixteenth Edition. Rearranged, thoroughly revised, and largely rewritten. With Illustrations. By H. C. Wood, M. D., LL. D., Member of the National Academy of Science, etc., Joseph P. Remington, Ph. M., F. C. S., and Samuel P. Sadler, Ph. D., F. C. S., etc. Philadelphia: J. B. Lippincott Co., 1888. Pp. xiv+2091. [Price, \$7.]

Consequences of Acute Suppuration of the Middle Ear, with Special Reference to Opening the Mastoid. By A. R. Baker, M. D., Cleveland, Ohio. [Reprinted from the "Transactions of the Ohio State Medical Society."]

Report of the Proceedings of the Illinois State Board of Health.

Quarterly Meeting, Chicago, October 25–26, 1888. The Yellow Fever Epidemic of 1888—Unnecessary, Ruinous, and Inhuman Quarantines—The "Danger Line" in Yellow Fever—Meteorological Conditions—Public Health in Illinois.

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus IX. New York: William Wood & Co., 1888.

Second Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Transmitted to the Governor, December 1, 1886.

The Comparative Merits of Tracheotomy and Intubation in the Treatment of Croup. By George W. Gay, M. D., Visiting Physician to the Boston City Hospital. [Reprinted from the "Boston Medical and Surgical Journal."]

Cataract Extractions, with only the Eye operated upon closed by Adhesive Strips. The other Eye left Open for the Guidance of the Patient. By Julian J. Chisolm, M. D., Baltimore. [Reprinted from the "Journal of the American Medical Association."]

The Great Value of a 0.25 D. Cylinder in the Relief of Headache and Eye Pains. By Julian J. Chisolm, M. D., Baltimore. [Reprinted from the "Journal of the American Medical Association."]

The Ætiology of Dipsomania and Heredity of "Alcoholic Inebriety." By Lewis D. Mason, M. D., Fort Hamilton, N. Y. [Reprinted from the "Quarterly Journal of Inebriety."]

The Preferable Climate for Phthisis; or, the Comparative Importance of Different Climatic Attributes in the Arrest of Chronic Pulmonary Diseases. By Charles Denison, A. M., M. D., Denver, Col. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

New Inventions, etc.

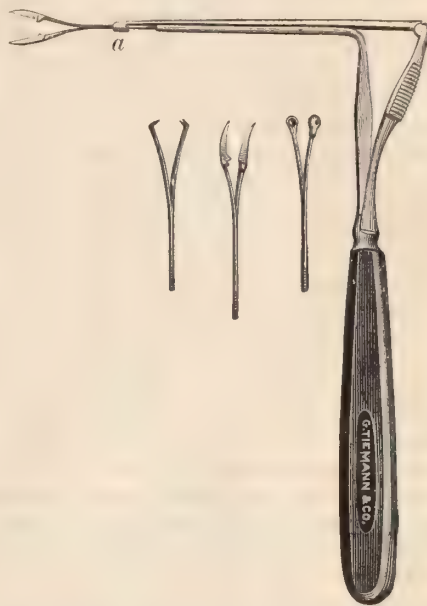
AN IMPROVED CANNULAR AURAL FORCEPS, COMBINED WITH SCISSORS.

By W. H. CARMALT, M. D.,
NEW HAVEN, CONN.

The instrument is a modification of Bumstead's well-known cannular forceps, figured in most of the catalogues of the instrument-makers. It was shown at the recent meeting of the American Otological Society, held in Washington, but, as it appeared from the discussion, as was not altogether unexpected, that the idea was not original to the members of that society, several gentlemen stating that they had had instruments constructed on that principle made for *themselves*, it was decided to withdraw it from publication there; but, inasmuch as nothing just like it has, so far as I or the instrument-makers have been able to discover, been published, the profession is no better off, and I have decided to let this one be figured for the benefit of "whom it may concern," making no other claim to originality than is contained in the foregoing statement.

The objection to the Bumstead instrument is that the spring handle is double—*i. e.*, each arm is a spring the same as in the ordinary thumb forceps, and the inevitable tendency in use is to close the blades by drawing the thumb and forefinger together. The resultant motion is to draw the forceps extremity back away from the object in the ear which it is intended to grasp. In order to avoid this, the whole hand must move slightly forward, but *this* motion at once is rough and uncertain compared with the delicacy and surety necessary in manipulating in so small a space and at such a distance. It is very apt to cause severe pain. To obviate this, I have had the anterior or forceps blade made stiff and continuous with a handle which, being grasped in the full

hand, is firm and fixed, the posterior or cannular blade only moving forward by pressure with the thumb. The action is uniform and steady. The only motion is that of the thumb, and this may be regulated to any nicety.



Besides this modification of the handle, I have adapted, by means of a screw at the point *a*, several other instruments working in a similar manner—*i. e.*, a "rongeur" forceps for gnawing off the surface of exuberant granulations or the remains of the pedicle of a polypus previously removed, and also two pairs of scissors, one curved on the flat and one straight.

The instrument is made by the well-known firm of Tiemann & Co., New York.

Miscellany.

The Buffalo Lithia Water in Uric-acid Lithiasis.—Dr. E. C. Laird, of Haw River, North Carolina ("Maryland Med. Jour."), says:

"The relief afforded by Buffalo lithia water to a patient of mine, Colonel H., of this place, a sufferer from renal calculi, is, I think, worthy of some record. The first of May last he came under my care subject to frequent attacks of nephritic colic. Except as to the usual treatment for the relief of present suffering, I put him exclusively upon Buffalo lithia water, Spring No. 2, under the influence of which he in a few weeks passed four calculi weighing from two to three grains each, which was followed by a disappearance of symptoms. Notwithstanding, however, the continued use of the water, after a short interval there was a return of these attacks with increase both of frequency and severity, when he made a visit to the Buffalo Lithia Springs, where he used the water six weeks with the following results: Ten days after arrival he began the discharge at intervals of large quantities of calculi and sand, which continued for several weeks and afterward gradually diminished, until at the expiration of the six weeks there was only occasionally and barely perceptible upon minute examination a slight sandy deposit in the urine. At the same time improvement in the general condition of the patient was very marked. The amount of calculous matter discharged may safely be estimated at from one to one and a half ounces. Under microscopic examination it was evident, I think, that the calculi were originally parts of larger formations dissolved by the action of the water. Analysis, made by Dr. F. S. Whaley, resident physician at the Springs and consulting physician in the case, showed it to be uric acid. Six weeks have elapsed since he left the Springs. Use of the water continued. The urine is free from sediment and normal. It is proper for me to add that I was in constant attendance upon Colonel H. during his stay at the Springs."

Dr. Whaley adds the following:

"Dr. E. C. Laird brought to me for analysis in June last three calculi which he informed me had been passed by Colonel H., of Haw River, N. C. They were egg-shaped, hard, brown, and weighed respectively two, two and a half, and two and three quarter grains. All of them showed marked facets. Analysis proved these to be uric acid. The formation was in consecutive layers and I made three analyses of one—one from the outer layer, one from the middle, and the other from the nucleus. All these analyses proved a uric-acid calculus. My examinations were both chemical and microscopical. After this the patient came to the Buffalo Lithia Springs, where, as resident physician, I was called in and saw him daily for about four weeks. He suffered from frequent attacks of nephritic colic and passed at intervals large quantities of uric-acid calculi and uric-acid sand under the use of Spring No. 2. The particles passed were irregular and so soft that they could be mashed between the fingers. The sand and fine particles under the microscope looked broken, porous, and presented a worm-eaten appearance. I believe, from this and similar cases which have come under my observation, that the Buffalo lithia water possesses solvent power over uric-acid calculi. My belief is based on the following observations: 1. That the calculi passed under the use of this water are softened so that they crumble easily. 2. The crystals under the microscope (which are passed under the use of water) are not so well defined and present a worn appearance, and the edges are not so sharp. 3. That patients with attacks of nephritic colic, under the use of the water, passed uric-acid sand and the attacks are relieved."

The Hoagland Laboratory.—The trustees announce that the laboratory is to be formally opened this (Saturday) evening, when an address will be given by Professor H. Newell Martin, of the Johns Hopkins University.

Charity Hospital.—Dr. A. M. Phelps has been appointed a surgeon to the hospital, in place of Dr. F. N. Otis, resigned.

Coca in Laryngeal Affections.—The Paris correspondent of the "Wiener freie Presse" quotes the following regarding the critical analysis made by Dr. Fauvel, the noted Paris laryngologist, in reference to Mackenzie's book "Frederick the Noble:" "... That which most surprises me is the fact that medication played a secondary rôle in the management of the case. I would have recommended the employment of coca Mariani to rouse the flagging energies of the patient. . . . My investigations, dating back to 1865, establish the fact that coca is a potent agent in combating debility. I have also shown that the injection of concentrated coca (thé Mariani) has a salutary influence on the laryngeal mucous membrane, alleviating pain and congestion. In Europe this remedy is relied on in cases of debility and where pain is a prominent symptom. . . . As further proof the case of General Grant is cited, in which Dr. Fordyce Barker, Dr. George F. Shradly, Dr. J. H. Douglas, and Dr. Sands were active. Coca was employed in this case with success (the preparation exhibited being thé Mariani), and it was stated by the attending physicians that without the use of this drug the general would not have been physically able to undergo the strain incidental to the work of finishing his 'Memoirs.'"—*Berliner Tageblatt*.

The late Dr. Sands.—At a special meeting of the Medical Board of the Roosevelt Hospital, held on Tuesday, November 20, 1888, the following entry was made in the minutes:

[Signed] J. WEST ROOSEVELT, *Secretary*.

"The death of Dr. Henry B. Sands removes from among us one who, as chief surgeon of this hospital, not only faithfully performed every duty, but elevated the character of the whole institution.

"An attending surgeon to the hospital from the date of its opening, November 2, 1871, his time and his great talents were freely given to its service. Careful and thorough in his work, skillful as an operator, clear and accurate in his judgment, truly and unselfishly considerate of the patients committed to his charge, his resignation upon March 31, 1888, was a most serious loss. Yet so thorough had been his work, so complete his method of organization, that his influence has remained a permanent good.

"On May 30, 1882, he was appointed the sole attending surgeon to the hospital. He had long advocated the plan of organization with a single responsible head to each department—a plan till then untried in any large hospital in the United States. His strength of purpose and determination overcame all obstacles. This appointment was a great compliment to his professional reputation and personal character, and he showed himself worthy of the trust reposed in him.

"Such was his energy and such his devotion to work that he left the hospital with a surgical department second to none in the country. The chief ambition of his professional life was realized, and he had the satisfaction of seeing the system, for which he had done so much, firmly established.

"The members of the medical board inscribe in their minutes their high appreciation of the services rendered to the hospital by Dr. Sands, their recognition of his extraordinary ability, and their deep sorrow for the loss to themselves and the entire community of so great a surgeon and so good a man."

ANSWERS TO CORRESPONDENTS.

No. 243.—Glass or gutta percha.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

THE INFLUENCE OF THE NERVOUS SYSTEM ON CELL LIFE (METABOLISM).*

By T. WESLEY MILLS, M. A., M. D.,

PROFESSOR OF PHYSIOLOGY, M'GILL UNIVERSITY, MONTREAL.

In a paper entitled "A Physiological Basis for an Improved Cardiac Pathology," read in abstract in August, 1887, before the Canada Medical Association, I endeavored to show the relation of the cardiac nerves to the nutrition of the heart; but the subject grew as I proceeded with its study, so that I perceived that the theory I applied to the heart was equally true of the other organs and tissues. In that paper, which was published in the New York "Medical Record" of October 22, 1887, I advanced a large number of facts derived from common experience, physiological experiment, pathology, and clinical medicine in favor of what I termed a theory of *constant neuro-trophic influence*.

Briefly, this theory was to the effect that in mammals, if not also in some lower groups of vertebrates, the nutritive processes are all under a *constant* regulative influence by the nervous system, in the sense that they are so dependent upon this influence that they do not and would not go on without it. It was also pointed out that function was not a thing totally distinct and alone regulated by the nervous system, but that function was only one *phase* of a general metabolism, and was no more under the influence of the nervous centers than the other less recognized phases.

A year's additional study of the subject has convinced me more than ever of the necessity of widening our views of the relation of the various organic processes, so that, instead of terming the theory I would offer for your consideration one setting forth a constant neuro-trophic influence, I would replace it by the expression *constant neuro-metabolic influence*, as it implies a wider and truer conception of the subject as I view it; and I am not sure but that it would be well to abandon the term "nutrition" altogether, or, if not, certainly to define it afresh.

The following, then, is a brief presentation of the subject in a form largely free from technicalities.

This subject is of the utmost importance and has not received the attention hitherto in works on physiology to which, we believe, it is entitled. We may first mention a number of facts on which to base conclusions:

1. Section of the nerves of bones is said to be followed by a diminution of their constituents, indicating an alteration in their metabolism.

2. Section of the nerves supplying a cock's comb interferes with the growth of that appendage.

3. Section of the spermatic nerve is followed by degeneration of the testicle.

4. After injury to a nerve or its center in the brain or spinal cord, certain affections of the skin may appear in

regions corresponding to the distribution of that nerve; thus herpes zoster is an eruption that frequently follows the distribution of the intercostal nerves.

5. When the motor cells of the anterior horn of the spinal cord, or certain cells in the pons, medulla, or crus cerebri, are disordered, there is a form of muscular atrophy which has been termed "active," inasmuch as the muscle does not waste merely, but the dwindling is accompanied by proliferation of the muscle nuclei.

6. In acute decubitus, bed-sores form within a few hours or days of the appearance of the cerebral or spinal lesion, and this with every precaution to prevent pressure or the other conditions that favor the formation of such sores.

7. After section of both vagi, death results after a period varying in time, as do also the symptoms, with the animal.

In some animals pneumonia seems to account for death, since it is found that if this disease be prevented, life may at all events be greatly prolonged.

The pneumonia has been attributed to paralysis of the muscles of the larynx, together with loss of sensibility of the larynx, trachea, bronchi, and the lungs, so that the glottis is not closed during deglutition, and the food, finding its way into the lungs, has excited the disease by irritation. The possibility of vaso-motor changes is not to be overlooked. In birds, death may be subsequent to pneumonia or to inanition from paralysis of the œsophagus, food not being swallowed. It is noticed that in these creatures there is fatty (and sometimes other) degeneration of the heart, liver, stomach, and muscles.

8. Section of the trigeminus nerve within the skull has led to disease of the corresponding eye. This operation renders the whole eye insensible, so that the presence of offending bodies is not recognized, and it has been both asserted and denied that protection of the eye from such prevents the destructive inflammation.

With the loss of sensibility there is also vaso-motor paralysis; the intra-ocular tension is diminished, and the relations of the nutritive lymph to the ocular tissues are altered. But all disturbances of the eye in which there are vaso-motor alterations are not followed by degenerative changes.

9. Degeneration of the salivary glands follows section of their nerves.

10. After suture of long-divided nerves, indolent ulcers have been known to heal with great rapidity. This last fact especially calls for explanation.

It will be observed, when one comes to examine nearly all such instances as those referred to above, that they are complex. Undoubtedly in such a case as the trigeminus or the vagi many factors contribute to the destructive issue, but the fact that many symptoms and lesions are concomitants does not of itself negative the view that there may be lesions directly dependent on the absence of the functional influence of nerve-fibers over the metabolism.

We prefer, however, to discuss the subject on a broader basis and to found opinions on a wider survey of the facts of physiology.

* Read before the American Physiological Society at the Congress of American Physicians and Surgeons at its first annual meeting, September, 1888.

After a little time (a few hours), when the nerves of the submaxillary gland have been divided, a flow of saliva begins and is continuous till the secreting cells become altered in a way visible by the microscope. Now, we have learned that protoplasm can discharge all its functions in the lowest forms of animals and in plants independently of nerves altogether. What, then, is the explanation of this so-called "paralytic secretion" of saliva? The evidence that the various functions of the body as a whole are discharged as individual acts or series of acts correlated to other functions has been abundant and clear; and, looking at the matter closely, it must seem unreasonable to suppose that this would be the case if there was not a close supervision by the nervous system over even the details of the processes. We should ask that the contrary be proved rather than that the burden of proof should rest on the other side. Let us assume that such is the case, that the entire behavior of every cell of the body is directly or indirectly controlled by the nervous system in the higher animals, especially mammals, and ask, What facts, if any, are opposed to such a view?

We must suppose that a secretory cell is one that has been in the course of evolution specialized for this end. Whatever may have been the case with protoplasm in its unspecialized form, it has been shown that gland cells can secrete independently of blood-supply when the nerves going to the gland are stimulated. Now, if these cells have learned in the course of evolution to secrete, then, in order that they shall remain natural—not degenerate—they must of necessity secrete, which means that they must be the subject of a series of metabolic processes, the final of which only is expulsion of formed products. Too much attention was at one time directed to the latter. It was forgotten, or rather, perhaps, unknown, that the so-called "secretion" was only the last of a long series of acts of the cell. True, when the cells are left to themselves, when no influences reach them from the stimulating nervous centers, their metabolism does not at once cease. As we view it, they *revert* to an original ancestral state when they performed their work, lived their peculiar individual life as less specialized forms, wholly or partially independent of a nervous system. But such divorced cells fail; they do not produce normal saliva; their molecular condition goes wrong at once, and this is soon followed by departures visible by means of the microscope. But just as secretion is usually accompanied by excess of blood, so most functional conditions, if not all, demand an unusual supply of pabulum. This is, however, no more a cause of the functional condition than food is a cause of a man's working. It may hamper if not digested and assimilated.

It becomes, then, apparent that the essential for metabolism is a vital connection with the dominant nervous system.

It has been objected that the nervous system has a metabolism of its own independent of other regulative influence, but in this objection it seems to be forgotten that the nervous system is itself made up of parts which are related as higher and lower, or, at all events, which intercommunicate and energize one another.

We have learned that one muscle cell has power to rouse another to activity when an impulse has reached it from a nervous center. Doubtless this phenomenon has many parallels in the body and explains how remotely a nervous center may exert its power. It enables one to understand to some extent many of those wonderful co-ordinations (obscure in detail) which are constantly taking place in the body.

We think the facts as they accumulate will more and more show, as has been already urged, that the influence of blood-pressure on the metabolic (nutritive) processes has been much overestimated. They are not essential but concomitant in the highest animals.

Turning to the case of muscle, we find that when a skeletal muscle is tetanized the essential chemical and electrical phenomena are to be regarded as changes differing in degree only from those of the so-called resting state. There is more oxygen used, more carbonic anhydride excreted, etc. The change in form seems to be the least important from a physiological point of view. Now, while all this can go on in the absence of blood, or even of oxygen, it can not take place without nerve influence or something simulating it.

Cut the nerve of a muscle and it undergoes fatty degeneration and atrophy. True, this may be deferred, but not indefinitely, by the use of electricity, acting somewhat like a nerve itself and inducing the approximately normal series of metabolic changes. If, then, the condition, when not in contraction (rest), differs from the latter in all the essential metabolic changes in rate or degree only, and if the functional condition or accelerated metabolism is dependent on nerve influence, it seems reasonable to believe that in the resting condition the latter is not withheld.

Certain forms of paralysis (*e. g.*, hysterical) are not followed by atrophy. Why? Because in this form the metabolic nerve influence is still exerted.

The recent investigations on the heart make such views as we are urging clearer still. It is known that section of the vagi leads to degeneration of the cardiac structure. We now know that this nerve contains fibers which have a diverse action on the metabolism of the heart, and that according as the one or the other set is stimulated, so does the electrical condition vary; and everywhere, so far as known, a difference in electrical conditions seems to be associated with a difference in metabolism which may be one of degree only, perhaps, in many instances, still a difference. The facts as brought to light by experimental stimulation harmonize with the facts of degeneration of the cardiac tissue on section of the vagi; but this is only clear on the view we are now presenting—that the action of the nervous system is not only universal, but that it is *constant*; that function is not an isolated and independent condition of an organ or tissue, but a part of a long series of metabolic changes. It is true that one or more of such changes may be arrested, just as all of them may go on at a less rate; thus, actual outpouring of pancreatic secretion is not constant; but secretion is not summed up in discharge merely, and, on the other hand, it would seem that in some animals the granules of the digestive glands are being renewed while they are being used up in secreting cells. The processes may be

simultaneous or successive. Nor do we wish to imply that the nervous system merely holds in check or, in a very general sense, co-ordinates processes that go on unoriginated by it. We think the facts warrant the view that they are in the highest mammals either directly (mostly) or indirectly originated by it; that they would not take place in the absence of this constant nervous influence.

The facts of common observation, as well as the facts of disease, point in the strongest way to such a conclusion. Every one has experienced the influence on not one but many functions of the body, we might say the entire metabolism, of depressing or exalting emotions. The failure of appetite and loss of flesh and mental power under the influence of grief or worry tell a plain story. Such broad facts are of infinitely more value in settling such a question as that now discussed than any *single* experiment.

The best test of any theory is the extent to which it will explain the whole round of facts. Take another instance of the influence over metabolism of the nervous system.

Every athlete knows that he may overtrain—*i. e.*, he may use his muscles so much as to disturb the balance of his powers somewhere, very frequently his digestion; but often there seems to be a general break; the whole metabolism of the body seems to be out of gear. If we assume a constant nervous influence over the metabolic processes, this is comprehensible. The centers can produce only so much of what we may call nervous force, using the term in the sense of directive power; and if this be unduly diverted to the muscles, other parts must suffer. The same holds of excessive mental application.

On this view, also, the value of rest or change of occupation becomes clear. The nervous centers are not without some resemblance to a battery; at most, the latter can generate only a definite quantity of electricity, and if a portion of this be diverted along one conductor, less must remain to pass by any other.

It is of practical importance to recognize that under great excitement unusual discharges from a nerve-center may lead to unwonted functional activity; thus, under the stimulus of the occasion, a man may in a boat-race originate muscular contractions he could not by the strongest efforts of his will cause under other circumstances. Such are always dangerous. We might speak of a reserve or residual nerve-force, the expenditure of which results in serious disability. It also applies to mental and emotional effects as well as muscular, and seems to us to throw light upon many of the failures and successes (so called) of life.

It seems that our past views of secretion and nutrition have been partial rather than erroneous in themselves, and it is a question whether it would not be well to substitute some other terms for them, or at least to recognize them more clearly as phases of a universal metabolism. We appear to be warranted in making a wider generalization.

To regard processes concerned in building up a tissue as apart from those that are recognized as constituting its function seems to be illogical and unwise with the knowledge we at present possess. Whether in the course of evolution certain nerves, or, as seems more likely, certain nerve-fibers, in the body of nerve-trunks have become the medium of

impulses that are restricted to regulating certain phases of metabolism—as, *e. g.*, expulsion of formed products in gland cells—is not, from a general point of view, improbable, and is a fitting subject for further investigation. But it will be seen that we should regard all nerves as “trophic” in the wider sense. What is most needed, apparently, is a more just estimation of the relative parts played by blood and blood-pressure, and the direct influence of the nervous system on the life-work of the cell.

These views are greatly strengthened by the facts well known to every observer of disease in the human subject. The preponderating development of the cerebrum in man must be taken into account in the working of every organ. To have a normal stomach, liver, kidneys, etc., is not enough; for real health all the parts of that great complex of organs we call the brain must not only work, but work in concert. We must regard the nervous centers as the source of ceaseless impulses that operate upon all parts originating and controlling the entire metabolism of which what we term functions are but certain phases, parts of a whole, but essential for the health or normal condition of the tissues. Against such a view we know no facts either of the healthy or of the disordered organism.

ON A FORM OF PURPURA

ASSOCIATED WITH ARTICULAR, GASTRO-INTESTINAL, AND RENAL SYMPTOMS.

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THE combination of purpura rheumatica with diarrhœa is frequently referred to by the older writers.

The cases which I here report have additional features, and, with others to be found in the literature, belong to a very remarkable group worthy of more careful study. The characters are:

I. Recurring outbreaks of purpura often associated with urticaria or local œdema.

II. Articular pain, sometimes with swelling.

III. Gastro-intestinal disturbance—colic, vomiting, diarrhœa, and occasionally hæmorrhage.

IV. Hæmaturia, albuminuria, and sometimes a fatal nephritis.

CASE I.—A. B., boy, aged six, seen January 23, 1888, with Dr. Dunton. No rheumatic history in family; some members gouty. An aunt's child on father's side, aged three weeks, died of purpura hæmorrhagica. The child has been exceptionally well developed and strong. During the past summer he failed somewhat in health. The present trouble began about four weeks ago with pain about the ankles, followed by attacks of colic, with diarrhœa, and a skin eruption, urticaria-like in character, which tended to become purpuric. Large areas were black and blue, just like a bruise.

About ten days after the beginning of the illness there was bleeding from the bowels, but not in large amount. There were not in all more than eight or ten stools, containing from a teaspoonful to a teacupful of blood. No bleeding from the gums or from the other mucous surfaces. For the past two weeks he has been up and down, crops of purpuric urticaria

coming out with the recurring attacks of colic. There has not been fever at any time.

Present Condition.—The child is not specially anæmic, not much wasted, though he has fallen away greatly from his former plump condition. Temperature, 98°; pulse, 96; tongue is a little furred; abdomen slightly protuberant, not painful on pressure. When asked where the pain is, he always places his hand upon his navel; no enlargement of the spleen or of the liver; joints not painful. On the skin over the elbows there is a fresh crop of reddish-brown urticaria wheals, rather more solid and less œdematous-looking than ordinary hives; there is a patch also on the flexor surface of the right arm. These spots are all hæmorrhagic, and about the raised ones are numerous small extravasations. There is no swelling of the elbows. About the buttocks and thighs there are very many purpuric spots. No swelling of the ankles.

An attack of pain came on during the visit. It had the character of ordinary colic. The stools were brownish-black in color, but contained no blood. The urine was clear; specific gravity 1.018, containing distinct traces of albumin. Microscopical examination showed a few red blood-corpuscles and fine granular tube-casts.

I saw the boy on four other occasions between January 23d and February 7th. About the 25th of January œdema of the ankles was noticed. This increased, the scrotum became swollen, and within ten days there was general anasarca. The urine was highly albuminous, and contained tube-casts and a few red corpuscles.

I did not see the boy again, but learned from Dr. Dunton that the renal symptoms persisted, and these assumed the character of Bright's disease, of which ultimately he died in about six weeks. No further articular or purpuric symptoms developed.

CASE II.—Bartholomew H., aged forty-six, machinist, admitted to the Philadelphia Hospital, October 28th, with diarrhœa, an extensive purpuric rash, and polyarthritis. The patient has been a tolerably healthy man; has used spirits moderately; no history of specific disease; he knows of no similar affection in his family. In April, 1887, he had a severe attack of gastro-intestinal disorder, accompanied with "black eruption," as he describes it, on his legs, similar to that from which he now suffers. There were no spots on the arms. He was ill at this time about two or three weeks. Since April of last year he has been failing in health, and has had several sharp attacks of diarrhœa. The present attack began on Saturday, October 20th, with pain in the arms and knees, and a rash came out on the elbows and legs. Throughout the week he had great pain in the joints, and the knees, ankles, and right elbow became swollen.

On the 29th, the day after his admission, the following note was made: The patient is a moderately well-nourished man; looks pale; the tongue is furred, swollen, and indented. Both elbows tender, not swollen; complains of pain on flexing the right arm. On both arms there are numerous purpuric spots from 1 to 3 mm. in diameter, most abundant on the flexor surfaces. Just below the bend of the right elbow there is a large extravasation the size of a quarter-dollar piece, which is a little raised at the center. There are eighteen or twenty spots on the extensor surfaces of the elbows; no extravasations on the skin of thorax or of abdomen. Hip joint not painful to touch or to movement; the right knee is a little swollen, and can not be flexed; the right ankle is not swollen, but is tender. There are numerous fading ecchymoses on the extensor surfaces of the thighs and many on the skin of the popliteal spaces; there are none on the legs. During the examination he had several attacks of colic. The urine was turbid and deposited a flocculent

sediment of mucus. On boiling, it cleared slightly. On the addition of acid there was a distinct deposit. Microscopically, there were leucocytes, isolated red blood-corpuscles, and a few blood-casts. He has had profuse diarrhœa, but no blood in the stools.

October 30th.—Urine not materially reduced in amount. Specific gravity 1.016. Chemical and microscopical characters as before. Has had persistent vomiting to-day.

November 1st.—Passed a restless night; vomiting has been very distressing; complains a good deal of joint pain; the lobes of the ears are very tender to the touch, congested and red; no distinct extravasation; the right elbow is red and swollen; last night a fresh eruption of purpuric spots appeared on the exterior surfaces of both elbows; the spots are raised, and look like those of purpura urticans. There are also two spots on the metacarpal joint of the left index finger. The ecchymoses on the flexor surfaces of arms have faded. The knees and ankles are not swollen. Temperature, 100°; pulse, 88, small. Heart sounds normal. Tongue still coated; gums not spongy.

4th.—For the past three days the albumin in the urine has been much more distinct, and there are many tube-casts. Uric acid deposits if the urine is left standing. The general condition has much improved; the diarrhœa is checked, and he no longer complains of abdominal pain; vomiting is not so distressing.

5th.—Patient much better to-day; no joint pain; the ecchymoses have almost faded, and the vomiting is checked.

From this date the recovery was rapid, and at present date (November 30th) convalescence is established. The urine is still albuminous. The treatment consisted in the administration of naphthalin with Dover's powder for the diarrhœa and colic, and increasing doses of Fowler's solution.

Remarks.—Atkinson, in Pepper's "System," vol. ii, refers to this form of purpura as described by Hænoch ("Berliner klin. Wochenschrift," 1874), and by Couty ("Gazette hebdomadaire," 1876). The latter author, in an exhaustive article, has collected a large number of cases, and describes the disease as "*une espèce de purpura d'origine nerveuse.*" Wagner (Archiv der Heilkunde," Bd. x) and Zimmermann ("Archiv der Heilkunde," 1876) have also reported cases identical with those above described. With the exception of a paper by Binet on "*Purpura hémorrhagique avec œdèmes mobiles et crises intestinales*" ("Revue méd. de la Suisse Rom.," 1886) I find no very recent accounts in the journals.

I think these cases come properly under the designation *purpura rheumatica*, of which they constitute the most aggravated and serious form. The varieties of this condition may be grouped as follows: 1. Cases in which the purpura occurs with slight articular pain, or with diarrhœa alone, or in which the eruption comes without these symptoms in children who have had rheumatic manifestations. 2. Acute arthritis involving many joints and associated with extensive *purpura urticans*—the *peliosis rheumatica* of Schönlein. 3. The variety here described in which, with articular affection and purpura, there are gastro-intestinal crises, hæmorrhages from certain of the mucous surfaces, albuminuria, and in some cases a fatal nephritis.

Are these cases truly rheumatic, or is not the articular affection upon which so much stress is laid analogous to that which we see in hæmophilia and scurvy? It is difficult to escape from the former view in the presence of

characteristic cases of *peliosis rheumatica* with endocarditis and pericarditis; and yet the close relationship and even interchangeability of certain of these cases of purpura with urticaria, with erythema nodosum, and with the angio-neurotic œdema, favor the suggestion that the entire group may depend upon some poison—an alkaloid, possibly, the result of faulty chylipoietic metabolism—which, in varying doses in different constitutions, excites in one urticaria, in a second *peliosis rheumatica*, and in the third a fatal form of purpura.

MALIGNANT NEOPLASMATA:

READ IN THE DISCUSSION
BEFORE THE NEW YORK STATE MEDICAL ASSOCIATION,

October 10, 1888.

By JOSEPH D. BRYANT, M. D.

Question 7. What is the rationale of the recurrence of excised neoplasmata in distant parts?

Question 8. What is the explanation of the tendency of certain neoplasmata to involve secondarily neighboring glands?

Question 13. Are malignant neoplasmata ever cured?

These and kindred queries have been made audibly and inaudibly for many years. The acute clinicians of the past have propounded them to the correspondingly learned pathologists of their time. The skilled surgeons too, in addition to this, have silently interrogated their own and the experience of others for the correct answers. The unfortunate victims of this disease have anxiously addressed the last question of this series to any and to all who might perchance offer them encouragement and consolation in their affliction. And now at the latest moment, after these years of thoughtful consideration given to them by master minds, the questions are asked again; therefore

“Together let us beat the ample field,
Try what the open, what the covert yield.”

For the purposes of this discussion it is proper, I think, to limit consideration to malignant neoplasmata alone, since these are the growths that excite the greatest apprehension and call for the most judicious opinions and treatment. In this connection the expression malignant is understood to apply to the neoplasmata that are malignant by reason of their inherent nature, rather than by reason of certain destructive changes that may occur in growths irrespective of their nature, whereby the strength of the patient is sapped and death finally ensues from exhaustion dependent on septic and other secondary influences.

That a malignant neoplasm of a similar character as the one excised may occur in a part distant from the seat of the excision is a fact too well and too long recognized to require even a moment's consideration at this time; still, the exact reasons for this occurrence or recurrence are yet unsettled. It is aptly said: “The whole creation is a mystery, and particularly that of man.” It might well be said, and as aptly, that normal vital force is a mystery, hence perverted vital force is alike mysterious.

It seems to me to be hardly necessary to give an entirely separate consideration to each of the first two questions al-

lotted to me (seven and eight of the series). They are interdependent, for, when the “rationale of the recurrence of excised neoplasmata in distant parts” is stated, it will be seen that the explanation of this fact will comprehend all that is reliable regarding “the tendency of certain neoplasmata to involve neighboring lymphatic glands.” The latter occurrence is but a well-defined step in the course of the more extended journey of the former. There are two genera of recurrent neoplasmata to which it is particularly desirable that attention be called—viz., carcinoma and sarcoma. These genera represent to the fullest extent the phenomena of the inception, cause, and termination of malignant growths. It is advisable at this time to recall some of the theories regarding the reasons for the occurrence and spread of carcinoma. It will be noticed that these propositions are of both a diverse and an interdependent character.

1. That carcinoma is the expression of a specific blood condition.

2. That a morbid material is present in the blood, which, coming in relation with appropriate tissue, enters into combination with it and causes the growth of the tumor.

3. The dyscrasia theory; the theory that the disease has its origin in the constitution at large, the tumor being only the local manifestation.

4. That the disease is purely local in its nature, arising from a local embryonal or idiopathic point of departure.

5. That it is due to a constitutional predisposition not dependent on dyscrasia in the ordinary acceptation of the term.

6. That it is due to perverted nervous influence. This is a curious but not a rational theory. In addition to these can be added a more modern theory—one that is attracting much attention at this time, viz.:

7. That malignant growths are of an entirely local origin, dependent on a specific local virus, endowed with characteristic bacilli.

There are many examples of this presumptive contagion cited, which, to say the least, afford somewhat startling evidence in favor of this last theory, since they can hardly be referred alone to the strangeness of coincidence.

If carcinoma and sarcoma were the expressions of a specific blood condition, the peculiar morbid blood state should then antedate the appearance of the tumor, and its existence should be quite as well marked before as after the appearance of the tumor. The fact is, the tumor, when external, always antedates the appearance of a depreciated blood state, often for some time.

The removal of a growing carcinoma or sarcoma may be followed by complete recovery from the disease, the patient maintaining perfect health thereafter. This could hardly happen if the occurrence of the disease had depended on a specific or peculiar blood state, unless it is assumed that the only tissue of the body susceptible to its influence had been removed by the operation, or that the blood had become pure, or that the tissues had become tolerant of the poison.

If carcinoma or sarcoma depended on a specific or peculiar blood condition, either of the growths should appear

in different parts of the body, in like tissues at about the same time, and, too, each should recur after removal in a tissue similar to that which was first attacked, as in the opposite mammary gland, etc.

That these diseases have a hereditary bearing of importance, dependent either on tissue transmission or on some other process, it seems almost impossible to deny. The percentage of cases of cancer having hereditary association has been variously estimated. Sir James Paget expressed the belief that at least in one in three of the afflicted heredity could be traced, and traced, too, in such as had undoubted cancer. It is important to remember in this connection that not a few die of cancer in whom its existence has not been suspected. But why spend further time "carrying coals to Newcastle"? To-day the mass of evidence seems to point to the following facts:

1. That carcinoma and sarcoma depend entirely on local causes for an existence in many cases.

2. That they are more commonly a local manifestation of an inherent peculiarity of the tissues, called forth by some form of irritation at the seat of development.

Be this as it may, the local manifestations of these diseases are the first to be seen; they appeal first to the fears of the patient, and for these reasons they first invoke the wisdom of the medical profession. It is these manifestations that present to the mind of the medical profession the only point of departure from which to begin successful treatment. In this connection the question can now be asked, "How do malignant growths infect neighboring and distant parts?" There seems to be no doubt of the fact at this time that either the nuclei or the granular matter of the cells peculiar to malignant growths, or the cells themselves, are the agents that directly or indirectly cause the spread of the disease from the primary point of occurrence. These agents of infection are carried from the primary site by the lymph-vessels associated with the growth, and they often find a resting place in the lumen of these vessels, and are checked in their journey through them by the lymph-glands nearest to the point of departure. These infective agents are also conveyed directly to distant parts or viscera by means of the capillary blood-vessels, whose open mouths are frequently to be seen within the intimate structure of a highly vascular malignant growth. The cells of sarcomata especially possess an inherent tendency to "move on" and to otherwise extend their area and influence by increase of their number through the recognized process of cell-growth. By reason of these latter facts the normal tissues that surround malignant neoplasms become so infiltrated with the elements of the growth that ere long they, too, form a part of it, and exercise in turn a like influence on the neighboring structures. In sarcomata the blood-vessels are the chief means of the spread to distant parts, due, it is thought, to the better accommodation afforded by the blood-vessels to the size of the cells of the growth, and also to the intimate relations existing between the blood-vessels and these cells.

Sarcomatous tumors, therefore, spread more rapidly than the carcinomatous, and occur secondarily at greater distances from the initial growth. The cells of these growths reach their final resting places more commonly by means of

the blood-current, which is rapid transit indeed as compared with the movement in the lymph-vessels, irrespective of the frequent interruptions of the latter by the lymph-gland locks of these vessels.

If such is the method of the spread of malignant tumors, it naturally ought to follow that the direction, extent, and rapidity of the spread will be in direct relation with the degree of vascularity of the growth, the richness of the region in lymphatics, and the density of the surrounding tissues, other things being equal. These conclusions seem to be well substantiated by clinical evidence, for the more vascular the tumor, the more rapid is its growth, and the sooner secondary processes of a similar nature are established in distant parts; the richer the contiguous structures are in lymph-vessels and glands, the sooner the disease establishes secondary footholds in the neighborhood and the more difficult the eradication becomes; the denser the surrounding tissues of the growth, the slower are the processes of infiltration. The influence of this density is often well shown by the irregularity in the outline of a rapidly developing tumor, which extends more rapidly in the direction of the least resistance. Malignant growths can be produced also by inoculation and self-inoculation. These methods of causation are believed to be strong arguments in favor of the specific-virus theory of the causation and dissemination of malignant formations. Malignant growths vary from each other in the rapidity of dissemination, a fact which appears to depend largely indeed on their anatomical peculiarities; as, for instance, abundant granular matter, small cells, great vascularity, and loose structural arrangement of the tumor and of the surrounding tissue, are some of the conditions that are associated with rapid dissemination. It now remains to be said that the carrying from the initial growth to a near or distant part of any of the infecting elements of a growth, by either of the means of transmission already mentioned, causes the development in the part at the place of lodgment of a growth similar in all respects to that from which the infecting agent took its departure. In this secondary depot, processes and changes take place similar to those that had occurred in the primary one, and it in turn disseminates its virulency to the parts allied to it by associated function or contact.

Thus far in this paper the constitutional aspect of the question of the production and dissemination of malignant neoplasmata has not been given a hearing. The lack of time and space will not permit me to discuss this phase of the disease up to the point of the belief that I shall express in the matter. Malignant disease as such is not inherited, but analogy alone in respect to transmitted similarities of a different kind teaches us that the tendency of malignant disease, as expressed by the vulnerability of the cell tissue to the peculiar or exciting influences of the growth, is transmissible from parent to offspring.

Question 13. Are malignant neoplasmata ever cured?

This question can be safely answered in the affirmative. The efforts of nature alone are reported to have effected a cure in rare instances. The endeavors of the surgeon, too, have been followed by a fair percentage of cures. The site of the growth, however, has much to do with the result in

this respect. The late Professor S. D. Gross expressed the belief that 9 per cent. of mammary cancers could be cured by thorough operation when employed at the proper time. Butlin reports 38 per cent. of the cases of cancer of the lower lip to have passed the three years' limit of cure without return. Gross felt assured that a year might be added to the lives of patients by operation on those unfavorable for cure. It is not my intention to cite cases of real or presumptive cure that have come under my personal observation, since they will add nothing important to the results that have just been mentioned. It is my intention, however, to embrace this opportunity, under this heading, to speak in emphatic terms of the measures which I think necessary to be adopted to gain the full benefit to the patient of the surgeon's ability to cope successfully with a larger number of cases of this disease.

This consideration will be divided into the following headings:

1. Early diagnosis of the nature of the morbid growth.
2. Prompt and thorough treatment of it.

The early diagnosis of malignant disease will require the timely action of three distinct agents: (1) of the patient; (2) of the medical attendant; (3) of a microscopical expert. The natural inclinations of a member of the human family who is in the possession of a rational mind lead him to resent the idea of the occurrence of malignant disease in himself or in one of his own. He will not infrequently seek advice from the sources which will afford him the greatest personal comfort, irrespective of the wise promptings of his own judgment in the matter. This course, on his part, is due quite as much to pride and sentiment as to dread of being informed of the actual facts of his case. The medical attendant can do very much indeed to rectify this unfortunate state of affairs. He should consider it a case of *emergency* in the full sense of the term, and advise the patient of a course of action that will meet the full requirements of it. But how does the medical attendant in a multitude of instances fulfill his duty in this respect? He, too, is often controlled by sentiment, or by a habit of professional moral syncope that permits him to shirk unpleasant responsibility. Sentiment causes the physician to encourage the patient in the belief of non-malignancy; to smile at his fears, if he has any, and, whether he has them or not, to say to him: "Come in a week or two if it is no better," or, "Come and see me again after a while," or, "Don't think it amounts to much; any way, don't worry," and at the same time he recommends something simple "for the blood" or for external application. A physician might do worse than this, and there is great danger that he will; he might disguise the characteristics of the morbid growth and accelerate its development by the application to it of some form of caustic, believing it to be good treatment in any case. Professional carelessness—better named professional shiftlessness—may permit the medical attendant to omit obtaining the history of the case or omit the examination of the diseased part except with a glance. Such methods of procedure as these are culpable, whether the patient is afflicted with a real or with a fancied disease. A hospital surgeon, or one with a private *clientèle*, can recall many instances of consultations with vic-

tims afflicted with malignant disease in whom the opportunity of affording more than temporary relief has been sacrificed by the ignorant or sentimental dalliance of a medical attendant. Patients should be educated in the belief that "an ounce of prevention is better than a pound of cure." The adoption of this line of action will cause patients to seek information whenever anything unusual happens to them, and then the physician who performs his Christian and professional duties well will solve the nature of the affliction at once, or as soon as possible thereafter. The patient who is left largely to his own discretion by the emasculated admonitions, "Drop in when you are this way" or "when you come to town," etc., is lured into a sense of safety that will lead him to stifle the wise promptings of his own good judgment. If the physician finds himself unable to determine the nature of the growth by the means at his command, the aid of the microscopist should be sought at once. It may be said that this aid can not be had in all instances, and that it too is not conclusive. The instances when this aid can not be had are very few indeed. The medical attendant has only to remove a small portion of the growth, if accessible, properly inclose it and send it by mail to the nearest recognized authority on the microscopical appearances of morbid growths, with a statement of the part of the body from which it was taken, and of his suspicions regarding it. In a few days at most the answer will be at hand. It is proper to add, in this connection, that the inclosure of a fee for the examination will in no way delay matters, nor detract from the value of the opinion. As to the importance to be placed on the opinion, I think I may say that it should always be considered as *one* of the determining factors of a diagnosis, rather than as conclusive evidence of it. In only rare instances in my experience has the microscope failed to decide the question for or against malignancy.

None but simple and unirritating applications should have been made to a suspicious growth prior to the completion of the diagnosis. If it be necessary to remove a suspicious growth, for any reason, before a diagnosis can be confirmed by microscopical examination, this aid should be sought as soon thereafter as possible, since the knowledge thus gained will become of great importance in estimating the subsequent treatment and final prognosis.

Treatment.—The treatment should always be twofold—constitutional and local. The former should be of a kind intended to strengthen the patient in every possible manner, in order that the healthy tissue cells of the patient's organism may be the better able to resist the influence on them of the cells and other products of the malignant growth. Special general medication, with the view of curing or delaying the progress of the growth, will prove elusive, and will be destructive, if it is employed to the exclusion of operative procedure. Let the maxim ever be, *Operate first, medicate afterward*. The use of the knife is the operative measure to which the patient should be subjected. The growth should be removed thoroughly by excision at the earliest possible moment after the diagnosis is made, and, if a doubt exist as to the nature of the growth, give the benefit of that doubt to the patient and remove the growth at once.

The earlier the removal, the better will be the chance of preventing and limiting dissemination. Any and every measure of treatment that will stimulate unnecessarily the flow of blood to the growth, or stimulate the action of the lymphatics in the neighborhood, should be avoided, for these results of irritation of the growth are directly productive of the dissemination of the infecting agents of the disease to the lymph-glands and distant parts by means of the blood and lymph currents associated with it. The knife meets the indications better than all other means for the removal of malignant growths for the following reasons:

1. It can be applied with precision at a greater distance from the growth than can any other measure.

2. It acts promptly and with less injury to contiguous tissues than any other agent; and without pain if anæsthesia be employed.

3. Healing takes place immediately when removal is done early and with proper care.

4. Neither irritation nor pain attends the healing process if the surgical indications of the wound have been carefully observed.

5. Cicatrization and deformity are less than from the use of caustics and other local agents.

The preceding are some of the practical advantages that attend the proper use of the knife for the removal of malignant growths with antiseptic precautions. The converse of these usually attends the use of caustic, cautery, and other means that are more slowly effective, and with the use of which, suppuration, ulceration, and sloughing, and their histological processes, antedate and often complicate the final healing. I am of the opinion that with an early diagnosis, prompt, repeated, and wide removal of malignant growths with the knife, a much larger number of lives will be spared, with a minimum of suffering to the patients. The surgeon's watchwords ought to be, *Cut early, cut often, cut wide, and remove contiguous lymphatic structures when practicable, whether diseased or not.*

ON TUMORS:

THE CLOSURE OF THE DISCUSSION
BEFORE THE NEW YORK STATE MEDICAL ASSOCIATION,

October 10, 1888.

By JOHN W. S. GOULEY, M. D.

[DR. GOULEY, when called to defend his thesis and close the discussion, said:]

1. The object of the remarks introductory to the discussion on tumors was to elicit the opinions of the fellows of the association and of others on questions of theoretical and practical value that have not been definitively settled, such as the questions of names and arrangement, of genesis, of metamorphosis, of contagiousness, of diagnosis, of treatment, of recurrence, and of cure. The time allotted to the discussion, being comparatively short, did not permit as complete an examination as the subject merits. It is therefore hoped that the association will soon direct the reopening of a question of such vital importance as the examination of new for-

mations in the human body, and particularly of the so-called cancerous tumors.

2. In the defense of the thesis presented to-day, and in the closure of this discussion, an endeavor will be made to invalidate the exceptions taken by the debaters against some of the views declared in the introductory remarks.

3. The question of consistent adherence to the anatomical basis for the nomenclature and classification of tumors received to-day only one negative answer, and this negative answer was not directed to its basis but to the nomenclature itself, to the effect that the profession "would not stand the long names" given in the schema presented. The learned fellow who made this assertion has, unintentionally, reflected upon the intelligence and scholarship of those most interested in the study of tumors, and it is more particularly for their use that the nomenclature is offered. But he has lost sight of the fact that the old names of tumors, placed between brackets in the schema, were given during the introductory remarks. There does not appear among these "long names" a single word which is not in current use in medical language, and to the histologist these "long names" are definitions of the pathic conditions which they are intended to designate. It may be said that the highest aim of the nomenclator is attained when he gives names which indicate the nature of the objects so named. Descriptive names are often considered good, but those that define are best. The debaters should remember that generic names mostly are used in ordinary medical language; that generic names are single—for instance, epithelioma for cancer, endothelioma for sarcoma; that single names for genera are in strict accordance with the rules of nomenclature and classification laid down by the highest authorities in nosonymy and nosotaxy; and that certain modern writers violate these rules by making use of the terms epithelial cancer for cancer and endothelial cancer for sarcoma, thus employing two words to express each generic name. The specific, varietal, and subvarietal names must of necessity consist of more than one word, that they may be distinguished one from another. The memory of the student of medicine is no more taxed by compound names than is the memory of the student of botany. The botanist is obliged to study his subject in accordance with the schema of which the following is a fair illustration, only one species, one variety, and one subvariety of clematis being given:

KINGDOM.—VEGETABLE.

SUBKINGDOM.—ANTHOPHYTA.

CLASS.—ANGEIOSPERMÆ.

Subclass.—Dicotyledonæ.

Order.—Ranunculaceæ.

Genus.—Clematis.

Species.—Clematis alpina.

Variety.—Clematis alpina occidentalis.

Subvariety.—Clematis alpina occidentalis tenuiloba.

The student of botany does not complain of long names. He soon becomes familiar with these names, and conducts his investigations agreeably to a method which has been shown to be time and labor saving, and compound names are essential to this method. Why should not the medical man do likewise, since his time is as precious as, and his

life no longer than, that of the botanist? The objection to the "long names" is not only ill-founded, but seems to carry with it the implication that the mental caliber of medical men is inferior to that of other men of science. No refutation of such an idea is needed. Aside from certain preliminary requirements, is not the study of medicine of itself conducive to exact methods, and is it not true that this study must begin with philosophy, which presupposes a knowledge of the value of correct terms? In point of fact, students of medicine are trained to remember compound names from the beginning of their anatomical work. They are required to remember the Latin names of all the bones, muscles, etc. They must soon become acquainted with *musculus sterno-cleido-mastoideus*, *musculus genio-hyo-glossus*, *musculus levator labii superioris alæque nasi*, etc. But they are unjustly asked to form a conception of what is the column of Goll, of what are Pott's, Graves's, Basedow's, and Duchenne's diseases, and of many normal and diseased structures also bearing the names of men! If they are able to remember all this, will it not be easier for them to memorize compound names that are well formed and based upon anatomy? In the case of species, varieties, and subvarieties of tumors the points of difference are so marked in their gross anatomical and in their histogenic characters that the compound names given them are not only justifiable but essential.

4. The old saying that "the profession is not yet ripe for a philosophical nomenclature and classification of diseases" is still often reiterated by those who lose sight of the fact that nomenclature and classification, diligently studied, are the best exercises to ripen and broaden the medical mind, and that the endeavor to properly name and systematically arrange morbid conditions leads to the most direct path toward the right understanding of their nature. Without some sort of nomenclature of diseases no medical book could ever have been written, and the earliest medical writings were most probably the outcome of a nomenclature begun long before, and of many attempts at arrangement. Medical writers, ever since the time of Hippocrates, made successive improvements in nomenclature until Celsus, Platerus, Warren, and others suggested systematic arrangement of the diseases already named, and until this was carried into effect by Sauvages. From that period many generations of physicians have contributed their share in the improvement of both nomenclature and classification, and it behooves every new generation to do likewise, for the work will probably never end. To attempt to make an entirely new arrangement would not be wise; to strive to improve that which is at hand is practicable and practical; but to wait for further maturity of the medical mind is virtually to retrograde. The time for improvement is always the present.

5. Some of the debaters and not a few writers have made use of the word "papilloma" as a generic term, most probably, however, through inadvertence, for they are well aware that there are no "papillomata," but that papillæ are sometimes found upon the surface of certain benign as well as of malignant growths, and that these papillæ upon neoplasms can only constitute subvarieties—*e. g.*, papillary cylin-

dro-cellular ino-epithelioma, papillary squamo-cellular epithelioma, papillary fuso-cellular endothelioma (sarcoma), papillary inoma, etc. The term "papilloma" has led to much confusion among clinicians, and the question of the benignity and malignity of "papillomata" was long under debate. Some clinicians believed "papilloma" to be benign, while others were of the contrary opinion. Those who regarded it as benign were right when the growth proved to be a papillary inoma, which is known to be benign, and the others who regarded it as malignant were right when the growth happened to be a papillary epithelioma or a papillary sarcoma, known to be malignant; but when on the one side it was asserted that all "papillomata" were benign, and on the other side that they were all malignant, both contesting parties were manifestly wrong. It is clear, then, that no tumor is entitled to the name papilloma, and that the prefixed adjective papillary is a subvarietal designation.

6. Telangiectasis in the malignant growths named in the schema can only constitute a subvariety—*e. g.*, telangiectatic polymorpho-cellular ino-epithelioma, telangiectatic cylindro-cellular ino-epithelioma, formerly called fungus hæmatodes, after the beginning of the necrotic process in the tumor. Inasmuch as this bleeding fungus occurs also in sarcomata and other tumors, it is clear that fungus hæmatodes can not be regarded as a distinguishing character of any particular genus of new-growths. Is it not therefore better to employ names of several words which indicate the histogenic characters of tumors than to perpetuate such a name as fungus hæmatodes, which can only convey an incomplete, if not erroneous, notion of the disease?

7. Many observers agree that, in epitheliomata, involvement of the lymphatic glands is very common, because cells are carried away from the primary growth chiefly through the lymph-current, while in endotheliomata (sarcomata) lymphatic glandular involvement is very uncommon because the disease generalizes itself chiefly through the blood-current. These facts, which have an important bearing in the differential diagnosis of epithelioma and endothelioma, were very properly set forth to-day by Dr. Carmalt, Dr. Nancrede, and Dr. Jacobson.

8. Endotheliomata (sarcomata) sometimes spring up from the neighboring tissues after fractures of long bones, preventing their union. Dr. Jacobson's case is a good illustration of this complication of fracture. But endotheliomata and other malignant growths of the periosteum or of the osseous tissue have been known to be indirect causes of fracture of the long bones. The so-called spontaneous fractures, occurring even when patients have attempted a sudden movement of the body in bed, are, in some instances, the outcome of malignant disease directly or indirectly affecting the bones.

9. Dr. Nancrede's point in reference to the place of the surgeon's attack in the ablation of certain breast cancers is sound and well taken—*viz.*, that "he should begin his operation in the axilla, and that in case it were not possible to remove all the diseased lymphatic glands, he should abandon the operation upon the breast." Therefore it may be said that whenever the lymphatic system is extensively invaded,

the operation upon the primary neoplasma is contra-indicated.

10. After asking the question whether there are specific histogenic characters by which cancer may be distinguished from other tumors, Dr. Moore made reference to the "caudate cell," now almost forgotten. Before answering the doctor's question, a brief statement of the history of the "caudate cell" will be made for the benefit of the junior fellows of this association. During the development of the cell doctrine, histologists, in endeavoring to solve the problem of specificity of cancer cells, thought they had discovered in the "caudate cell"—an elongated cytoblast with a tail-like appendage, a large nucleus, and well-defined nucleolus—the typical cell of cancer, but this notion was soon overthrown by the discovery of such cells in the normal urine of man, and afterward among the epithelia of the urinary passages—the epithelium of the bladder having been found to consist of many forms of cells, among which were "caudate cells."

In 1853, or perhaps before that time, the histologists had already arrived at the conclusion that there is no single typical cancer cell, but that certain cancerous tumors contain all forms of epithelial cells, while such is not the case in other tumors. This is only a part of the answer to Dr. Moore's question. Polymorphism of the cells is now admitted as a distinguishing character of certain cancers, but there is another element which is also an essential characteristic, and that is fibrous tissue forming alveoli in which the cells are contained; and fibrous tissue, being derived from the elements of the mesoblast, gives to these cancers, in this respect, a common origin with sarcomata. The derivation of such cancers is therefore triple—*i. e.*, epiblastic, hypoblastic, and mesoblastic, while other cancers issue from the elements of the epiblast only. Fibrous tissue is found in the variety of cylindro-cellular epithelioma whose cells are monomorphic, but there is no fibrous tissue in the squamo-cellular epitheliomata whose cells are also monomorphic. This is as far as Dr. Moore's question can now be answered. It is, however, necessary to look beyond histogenesis to fully explain what it is that makes cancerous and certain other tumors malignant, or rather what is the nature of the toxic element of malignant tumors. Bio-chemists may in time be able to give a satisfying answer to this very interesting and important question.

11. One of the debaters takes the ground that some of the cases cited, in the introduction to the discussion, to illustrate long periods of immunity, are in reality absolute cures, and that when the disease reappears it is by an entirely new invasion. At first sight this view seems plausible, but, since he tacitly admits that it does not apply to all of the cited cases, why, then, should it apply to any of them? Case II and Case III are fair examples of immunity for periods of eight and sixteen years, respectively, and of final recurrence in the scar. Case V and Case VII are also recurrences in the scar, in twenty and thirty years respectively, and there could be no better example than Case IX to support the view of recurrence after short and long intervals of immunity, and therefore of only temporary cure. Case XI could scarcely be regarded as an entirely new invasion. It

is only Case X that might possibly be considered as a new invasion, the disease having reappeared in forty years. Dr. Muzzie's case, cited by Dr. Moore, is a fair case of recurrence. Dr. S. D. Gross's case of breast sarcoma, cited by Dr. Nancrede, is another good example of true recurrence, the patient having undergone twenty-two operations in four years and being alive and in good health ten years and nine months after the last operation. The view that, clinically considered, cancers are curable, and that technically they are incurable, still seems tenable, for no proof has been adduced to show that the operation and subsequent treatment have eradicated the morbid elements, and that these elements have not remained latent, any more than that the growth is the result of an entirely new invasion.

12. The question of hereditary predisposition to malignant tumors, raised by Dr. Cronyn, is one of the most difficult of the problems to be solved. Any attempt at such solution must involve very extensive examinations of family records of many generations, and on the largest scale. Broca, in his treatise on tumors, gives an illustration of such an examination of the records of one family of thirty-three individuals during three generations, covering a period of sixty-eight years, sixteen persons in the three generations of this family having died of cancer. The investigation was facilitated by the preservation of accurate memoranda made by three succeeding physicians who were members of the afflicted family. This is probably the most complete record in existence, and its perusal will well repay the student of the question of hereditary predisposition to malignant tumors.

13. The question of micro-organisms infesting malignant neoplasmata has not been proposed in this discussion, because none of the fellows were prepared to take it into consideration. In a future discussion it may be asked, Are there micro-organisms which can be regarded as peculiar to malignant neoplasmata? In Germany it has been asserted that there exists a cancer bacillus, but the proof of its existence is, so far, unsatisfactory.

14. In the latter part of the last, and in the beginning of this century, the aid of chemistry was invoked in the study of tumors; but the work, considering the time when performed, was necessarily incomplete. Chemical investigation should now be instituted, on a new basis, with the object of ascertaining if there are leucomaines or extractives that are peculiar to malignant neoplasmata, or if these neoplasmata develop toxic elements other than leucomaines which can account in any degree for some of the symptoms manifested by patients in the later stages of malignant disease.

15. The contagiousness of malignant neoplasmata by grafting or otherwise, and many other important questions, yet remain to be discussed.

Cerebro-spinal Tubercular Meningitis.—"The morbid process in cases of this disease need not be limited to the meninges, the actual substance of the spinal cord being invaded. A single nodule of gray granulation has been found at times imbedded in the medulla oblongata, and looking as if it exactly replaced the natural tissues. Very likely odd symptoms of 'meningitis' may receive an explanation from such an occurrence."—*Lancet*.

RAILWAY INJURIES.*

By CHARLES W. BROWN, M. D.,

ELMIRA, N. Y.

THERE may be no valid reason for speaking of railway injuries as a separate and distinct class, but as injuries produced by car-wheels and car-bumpers have many distinctive characteristics, both as regards the effect upon the individual injured and the best plan of treatment to be pursued for their relief, and also the rapid increase in the number of such cases as the railways enlarge the amount of business and consequently employ a larger number of men, it is important that we should give this subject special attention.

In presenting this subject to your notice, I only hope to place before you some facts obtained from my experience in the treatment of quite a number of cases which have come under my observation.

So characteristic are most injuries produced by railways that the surgeon who has had large experience in this class of cases will usually be able, by examining the injury, to tell what part of the machinery produced it; for instance, when a hand or fingers have been caught between the draw-heads the parts are nearly if not completely cut through, and when between the bumpers, the parts are crushed to a pulp, the skin burst open, and the soft parts pressed out through the opening; and when the forearm or arm is caught between the bumpers, the bones are frequently forced up or down and shot from the two bumpers (like a cherry-pit from between the thumb and finger) and the soft parts burst open on the side of the limb from which the bones are forced out. When the wheels have passed over a limb it is frequently mangled and torn to shreds as far as the wheels came in contact with it, though I have seen many cases where from one to a dozen wheels of loaded cars had passed over a leg which had on it a heavy sock, a heavy boot-leg, and thick trousers, and after removing these the skin was found unbroken, and to a casual observer would not show even a mark of injury at the point over which the wheels had passed, but was slightly enlarged by the stretching of the skin from the hæmorrhage beneath it; and when the knife was thrust through the limb at the injured point it would collapse like a broken bubble: all the soft parts except the skin—bone and all—were reduced to a fluid pulp.

In one case a few years ago a Swede, working on the track, who was very deaf and did not hear the order which was given the men to clear the track for the gravel train, was knocked down by one of the cars and ten wheels passed over his right leg and foot; the limb was protected by a heavy boot reaching nearly to the knee; the leg presented the same appearance as described above; the skin did not appear to be even bruised, but was hard, distended, and pale.

On amputating the leg at the upper third, as soon as the knife was passed through, the skin of the whole leg below collapsed like an empty stocking, and there was not a piece of the tibia or fibula two inches long from the lower extremity to the junction with the upper third.

* Read before the New York State Medical Association at its fifth annual meeting.

Fractures of the long bones are very liable to be compound, as when brakemen jump from the top of cars to save falling, or when cars are going down the bank; the force is so great that the bones are driven through the soft parts.

Fracture of the patella was produced by muscular force in two cases by brakemen jumping from trains in motion.

Injuries produced by car-wheels and bumpers are far more serious than those usually produced by other means which at first would appear similar to a person not experienced in the treatment of railway injuries.

An idea of the nature of the injuries in 265 consecutive cases of railway injuries which have come under my care and treatment is given by the following table:

	Cases
Crushed fingers (80 fingers).....	53
“ thumb.....	21
“ hand.....	17
“ forearm.....	18
“ right forearm through elbow joint, olecranon process crushed off, and injury to chest.....	1
“ right forearm through elbow joint.....	1
“ toes.....	12
“ foot and toes.....	7
“ ankle.....	2
“ thigh.....	11
Contused wound, shoulder.....	2
“ “ knee.....	1
“ “ thigh and back.....	2
“ “ right hip and both legs.....	1
“ “ thigh.....	3
“ “ back.....	7
“ “ hip.....	1
“ “ inner side of thigh and perinæum.....	1
“ “ through perinæum into bladder.....	1
“ “ foot.....	1
Fracture, fingers.....	7
“ metacarpus.....	4
“ radius and ulna.....	2
“ scapula, and injury to hip and abdomen.....	1
“ scapula.....	3
“ clavicle.....	2
“ ribs.....	16
“ sternum.....	1
“ fibula.....	2
“ fibula and astragalus.....	1
“ tibia and fibula.....	8
“ tibia, involving knee joint, compound.....	1
“ patella.....	3
“ innominate bone.....	1
“ femur (both thighs) and dislocation dorsal vertebra.....	1
“ tibia and fibula (compound), two ribs, and perforation diaphragm.....	1
“ base of skull.....	3
“ nasal and malar bones.....	1
“ metatarsus.....	2
“ tendon quadriceps extensor.....	1
Scalp wounds.....	14
“ “ and contusion, back and shoulders.....	3
“ “ and lacerated wound of leg.....	1
Lacerated wound thigh and knee joint.....	1
Wounds of face.....	6
Squeezed through body and injury to kidney.....	1
“ between bumpers, injury to bladder.....	1
Dislocation shoulder, and fracture clavicle.....	1
“ right ankle.....	1
“ elbow, cut over eye, and concussion brain.....	1
Scalds by steam, face and body.....	4

	Cases.
Scalds and burns of hands	2
Torpedo-shot wound, leg.....	2
Rupture right eyeball and lacerated wound, face.....	1
Radial artery cut off by broken glass.....	1
	265

The cause of injuries was as follows:

	Cases.
Fingers caught between draw-heads	31
Thumb caught between draw-heads.....	10
Fingers caught between bumpers	22
Thumb caught between bumpers.....	4
Hand caught between bumpers.....	9
Foot caught between bumpers.....	7
Ankle caught between bumpers.....	1
Toes run over by car-wheels.....	1
Foot crushed by wheels	4
Leg crushed by wheels.....	7
Thigh crushed by wheels.....	6
Hand crushed by wheels.....	3
Arm crushed by wheels.....	8
Fell from top of car	5
“ from top of caboose.....	2
“ from top of cab.....	1
“ from engine.....	4
“ in man-hole.....	2
“ across coal-board in tender.....	2
“ in culvert.....	2
“ in turn-table pit.....	1
“ from coal-chute	3
“ from coal-trestle.....	2
Bridge timber fell on foot.....	2
Unloading heavy machinery, fell on foot.....	1
Unloading barrel of sugar, fell on foot.....	1
Face cut by glass.....	1
Radial artery cut by glass.....	1
Scald by water and steam from engine.....	4
Body caught between end of car and tie.....	1
Hand caught between end of tie and car.....	1
Leg caught under tie (unloading).....	1
Body caught between bumpers.....	6
Elbow caught between bumpers.....	2
Arm caught between bumpers.....	9
Forearm caught between bumpers.....	19
Foot caught between pump-plunger and cross-head.....	1
Foot caught in frog, and run over.....	2
Coupling, fingers caught by head of pin.....	8
Body caught between car and building.....	2
By cars going down bank.....	25
Hand-car ran off track, and over.....	1
Car-wheels ran over thighs while working under.....	2
Engine pushed over while working under.....	1
Engine ran in culvert	1
Struck by engine.....	8
Fireman, fingers crushed between door-frame and chunk of coal..	2
Jumping on and off switch-engine.....	2
Crawling under cars in motion.....	1
Catching on trains in motion.....	4
Jumped from top of box-car.....	3
Stepped off car in motion.....	4
Head struck bridge.....	1
Fireman's poker caught in bridge.....	1
Eye struck by brake-lever.....	1
Finger crushed by brake-lever.....	2
Struck by pieces of torpedo.....	2
	265

This table does not include any which were immediately fatal

AMPUTATIONS.	
	Cases.
Fingers (patients, 41).....	58
Thumb	12
Hand.....	4
Forearm.....	12
Arm, upper third.....	10
Arm, at shoulder joint.....	2
Toes (patients, 7).....	12
Foot, at middle.....	3
Ankle joint.....	1
Leg, at middle.....	5
Leg, right and left foot.....	1
Legs, both at lower third.....	1
Thigh, lower third.....	3
Thigh, upper third.....	2
Thighs, both, upper third.....	1
Wrist joint.....	2
	106

These all resulted in recovery except four; one amputation of arm at upper third died of mental shock, added to the shock already produced by the injury, on the fifth day. (This case was reported in a paper formerly read before this association on "Shock.") Another was an old man, fifty-seven years of age, who had several car-wheels pass over his right leg just below the middle, and a compound fracture of the left leg near the knee; he died of shock nine hours after the operation.

A strong, healthy car repairer, while working under a car, other cars ran down against it and pushed one wheel over his right thigh above the middle and up on to the knee of the left, so the joint was torn open; his condition seemed to warrant an amputation, and accordingly the right thigh was amputated at upper third, and the left dressed in fracture-box. He seemed to be doing well three hours after the operation was completed, but suddenly the heart stopped beating.

A double synchronous amputation of both thighs (formerly reported in the paper on "Shock") died within an hour after the amputations.

The amputations were all immediate except two, which were of the thigh—one four weeks after the receipt of the injury, and the other, a reamputation after amputation of leg near knee, over a year before (by another surgeon), which was followed by osteomyelitis.

It is not my intention to discuss the general field of amputations, but those necessitated by railway injuries.

There seems to be a question of doubt regarding the propriety of immediate operation after railway injuries, and I consider this a question of paramount importance.

In amputations after accident most authors divide the period in which the operation may be performed into the immediate, primary, and secondary. An immediate amputation is done during the prevalence of shock, and usually in from one to six hours after the receipt of the injury necessitating the operation; primary, after reaction from shock and before inflammation is established, usually within twenty-four hours after the injury; secondary, when performed after this limit and during the prevalence of inflammation. The danger of death after amputation depends chiefly upon the character of the injury and the location

of the line of section. The prognosis becomes grave in proportion to the exhaustion of the patient as a result of the loss of blood, shock, sepsis, or of any dyscrasia or intercurrent disease. Amputations of the lower extremity are more fatal than those of the upper, and the nearer the line of section to the body, the greater the danger.

Now, as regards the best time to amputate after railway injuries, I have no doubt about immediate amputation being the safest and best in nearly every instance where the surgeon is able to decide at once whether amputation will positively be necessary, and in a majority of railway cases there can be but little reason for doubt—as, when from one to a dozen car-wheels, or the wheels of an engine, have passed over a limb, it is a plain case, and amputation is the only safe procedure; as also where a limb has been crushed between car-bumpers. Where a limb has received such a crushing injury, and the circulation to the part beyond the injury is entirely cut off and a large amount of tissue is crushed to a pulp, it is my opinion that every hour beyond three or four that the amputation is delayed increases the danger of blood-poisoning and increases the danger to the patient's life, as so much crushed or lacerated tissue as is cut off from the circulation immediately becomes dead and decomposition very soon begins, and septic germs will be very liable to enter the circulation and, after amputation has been performed, destroy the life of the patient. I know it is urged by many surgeons that we should wait for reaction to take place. There may be cases where this is the proper thing to do, but in a large majority of railway injuries it is waiting for septic poisoning and for the patient to die without surgical aid. In many cases, waiting for reaction to take place is waiting for the shock already produced by the crushing wound to be aided by mental shock, which, in many instances, will produce death; when if, in place of waiting for reaction, an effort is made by the use of whisky hypodermically and artificial heat, with hot sling internally to assist nature in bringing about the much-desired reaction—which will, in nearly every case, manifest itself by rapid improvement in the circulation and all symptoms as soon as ether is administered, added to the stimulating effect of the ether—we have relieved the case of the mental anxiety, which always plays an important part in producing shock and keeping it up; as was plainly shown by a brakeman who had been injured four hours before I saw him, and he supposed he only had a fractured leg, and that it was produced by falling from a train in motion; his condition seemed good, and pulse indicated no severe shock; his body was not cold; but when his clothing was removed, and it was found that his leg was crushed by the wheels passing over it at the middle and he knew it must be amputated, he was immediately covered by a cold perspiration, with trembling of the body and limbs, and was nearly pulseless; but ether was at once administered and his condition rapidly improved; amputation was proceeded with, and after the operation was completed he seemed in better condition than before, and made a rapid recovery. I have noticed the same improvement after severe injury when ether was administered in a large number of cases.

I believe that many patients are lost after severe injuries and operations by neglecting to keep them surrounded by artificial heat and the use of stimulants hypodermically during and after operation; and until reaction is established they should be closely watched, as many times they will appear to rally from the effects of the ether and be doing well, when suddenly, without warning, the heart ceases to beat.

As gangrene is the death of a part of the body from the general or sudden arrest of its nutrition, we should always be certain that the parts used for flaps in amputations have enough vitality left to keep up capillary circulation sufficient to keep them alive.

In amputations after railway injuries the surgeon with but little experience in this class of cases is liable to let his anxiety to save as much of the limb as possible lead him to use for flaps tissues which have been so injured and the capillary circulation so feeble in them that the entire flaps become gangrenous and slough off, and have to heal by the slow, tedious process of granulation, if the bones do not ultimately protrude and require reamputation.

Injuries of this class are very deceiving, and parts far above where external inspection indicates sound tissue are most always so injured that in a few hours after the receipt of the injury the circulation ceases in the part and soon forms a slough, including all the injured tissues; so, when practical, the operator should be certain that none of this bruised or injured tissue is included in the flaps; though there are cases, where the loss of an important joint is involved, when we are justified in using some of this tissue to help make up the flaps, preferring to have the flaps partly sloughed off and heal by granulation to sacrificing the joint, as with proper antiseptic precautions a considerable amount of bruised tissue can be used as covering for granulations to spring up under; and though the part is dead and becomes discolored, it does not break down and decompose as with the wet dressings formerly used, but dries down and serves as a harmless covering until, in cases where the surface is not too large, the process of healing has gone on under it and entirely healed over.

I can best illustrate the manner of operating and dressing which I prefer by briefly reporting the details in the following case:

W., brakeman, aged twenty-three, healthy appearing young man, on December 7, 1887, about 5.45 A. M., was going over the top of a freight train setting brakes when his foot slipped and he fell partly between two cars, and the wheels of six cars passed over his right leg and the great toe of his left foot. He was brought to his home, and three hours after the receipt of the injury I first saw him and found he had lost considerable blood and had indications of considerable shock; he was very pale and covered with clammy sweat; the pulse was very feeble and irregular; he said he knew that the wheels had crushed his leg and foot.

His body was wrapped in dry, hot flannel blankets, he was placed in bed in a warm room, bottles of hot water were put around him, hot whisky sling was given liberally, and whisky was injected under the skin, and in less than half an hour there was marked improvement in his condition; ether was then administered, which still improved the pulse, and the body and

limbs became quite warm. On examination, it was found that the wheels had passed over the right leg at the lower third, and for four inches it was crushed to a pulp. The left great toe and that side of the foot, including the head of the first metatarsus, was crushed.

The hair was shaved from the leg, and it was thoroughly bathed with a very warm solution of bichloride of mercury, one part to two thousand; the left foot was also bathed with the same solution; a piece of quarter inch rubber hose twelve feet long was tied to the bale of a pail, one end resting in the bottom; the pail was filled with hot water that had been boiled and one part to three thousand of bichloride of mercury added and the pail suspended to the ceiling eight feet above the floor, the hose forming a siphon.

Esmarch's bandage was applied, and with the catling the anterior flap was formed from without inward and the posterior by transfixion; the flaps were then turned back and held by tractor which had been wet with bichloride solution, and the bones sawed through as nearly at the same time as possible. The crest of the tibia was slightly beveled with the saw, a stream of water from the hose was applied by an assistant, and by this means the flaps were kept thoroughly cleansed without touching a sponge to the cut surfaces.

The arteries were tied with juniper catgut and the ends cut short; the Esmarch bandage was then removed, the stream of water was allowed to flow over the flaps until oozing had ceased and they were nicely glazed; and the toe of the left foot, to the middle of the tarsus removed, was cleansed in the same manner; the flaps were brought together and were sufficiently long to come together without the least stretching, and the edges of the skin came perfectly in apposition. Then three deep sutures of catgut and numerous horse-hair sutures were introduced to keep the flaps smoothly and perfectly together; the line of incision was then thickly covered by iodoform and a piece of absorbent lint covered by the same placed over the whole stump and smoothly covered by four layers of the same, extending to the knee, and which were in turn held in place by a roller bandage. Then a piece of lint as wide as from the end of the stump to the knee, of sufficient length to go around under the limb and pin with safety-pins in front of the tibia, was applied; then a small stick was passed through under the loop of lint, with strings at each end tied to the arches of a bed-cradle.

posterior flap dragging down and pressing the thin anterior flap against the sawed end of the tibia, as is usual in amputations of the leg.

This apparatus can be applied by any surgeon, and is well represented in Fig. 1, which is from a photograph of the support as applied to the patient just described. He rallied nicely after the ether, and had no pain, swelling, nor redness; the dressings were not removed until the fifth day; there was no discharge whatever, and on the fourteenth day he was dismissed; at no time did the temperature rise above 99°.



FIG. 2.

Fig. 2 shows the stump, which is from a photograph taken October 3d.

The advantage of healing amputations by immediate union can hardly be estimated. Those of us who are much interested in obtaining the best results in every case must not forget the necessities on our part, not alone in using proper skill and judgment in our operating, but the closest attention to every detail as regards perfect cleanliness and modes of dressing wounds and amputations, and see to it that there is no neglect on our part, and, if possible, to apply our dressings so as to obtain not only support, but as near absolute rest as the individual case will permit.

The circulation to the extremity of the flaps in amputations I have known to be obstructed by the application of adhesive strips, which defeated the object for which they were applied, and were the means of producing sloughing, which would not have occurred if they had not been used.

There can be nothing more gratifying to the surgeon than to be able to witness the completeness and perfectness of his work whereby immediate union of the flaps takes place after an amputation, when, without one drop of de-

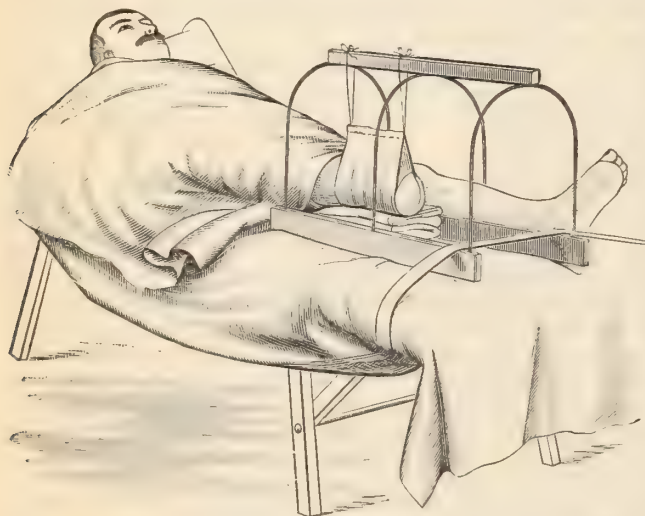


FIG. 1.

This supported the muscles of the posterior side of the limb, and the flaps, rounded up, allowed the tibia to settle down toward the center of the stump, in place of having the heavy muscular

tected suppuration, the eschar is so very faint and union so perfect that, in place of the hard, thick, and semi-organized tissue of a large scar, he can have the pleasure of seeing the smooth, tough, and elastic integument almost complete in its original perfectness, and giving to the wearer of artificial limbs a useful and comfortable appliance in place of a painful and useless stump, as is many times the result where there is a large amount of cicatricial tissue, which by the slightest injury or pressure is liable to be converted into a chronic ulcer and a constant annoyance to the patient.

Of course it is more gratifying to the surgeon to save an injured limb than to amputate, though we frequently hear laymen giving the surgeon credit for "cutting off legs and arms for the fun of it." With perfect cleanliness, the removal of all foreign substances, and modern dressings and appliances, with perfect quietude, many valuable limbs can be saved that would have been impossible under former plans of treatment. In this list of cases are many that were treated successfully without amputation that five or six years ago I would have believed impossible.

In one case a brakeman, nineteen years of age, was coupling, his body was caught between the cars and he fell to the track insensible, and a car-wheel passed over his right elbow, through the joint, producing a lacerated and contused wound six inches in length; the olecranon process was crushed off; the shock was so great, and of the insidious variety, that it was dressed without an anæsthetic, and he was apparently happy all through the operation, singing and joking as the sutures were being introduced. The piece of bone was removed, the wound thoroughly cleansed with bichloride solution as hot as I could bear my hand in, and the tissues that were crushed were removed with the scissors. It was found that the important vessels in the bend of the arm were intact, so the wound was closed as well as the scanty amount of tissue would permit, and dressed with iodoform and absorbent lint. He recovered in three months, with some motion in joint, and is now braking on freight-train.

In another case a man had his elbow crushed between the bumpers, which only caught the outer side of the arm, and it was shot out from between, so the large vessels received no direct injury; the joint was torn open, and there was an opening through the joint that water passed through when it was poured into the upper wound. This was dressed in the same way as in the former case, and the man made a good recovery, with motion of the joint nearly perfect, except rotation.

And now I will not take more of your time in reciting cases, but, in closing, wish to enter my protest against the use of air-tight dressings after amputations and in dressing wounds after injury—I refer to oil-silk, rubber tissue, etc. By their use more harm than good is done by preventing evaporation of perspiration and moisture from the part. Suppuration is more apt to take place than with light porous dressings made aseptic with bichloride and iodoform.

The Treatment of Eczema by Cold Powders.—Dr. Veiel, in a paper on the treatment of eczema ("Monat. f. prakt. Derm.," 1888, p. 181), speaks highly of the soothing effects to be obtained in acute cases without exudation by the application of cold dry starch powder. Gauze bags filled with the powder are applied to the part, and kept cold by being covered with India-rubber bottles filled with ice and salt, which were frequently refilled.—*Brit. Med. Jour.*

SULPHONAL IN INSOMNIA.

By E. B. DOOLITTLE, M. D.,

JEANESVILLE, PA.

HAVING noticed the very favorable results alleged by our German colleagues with this new hypnotic, I procured a sample for trial, and have thus far given it in about thirty cases of insomnia, some simple, others accompanying acute and chronic diseases. The results were uniformly good. The dose given, with one exception, was half a drachm.

In every case but one sleep followed in about an hour, lasting from four to eight hours. In one case it had no perceptible effect, but a dose of forty-five grains afterward produced sleep of nearly six hours, and was followed by considerable languor, mental hebetude, and loss of appetite for twelve hours or more; in no other case were there any unpleasant after-effects noticed. Several of the patients had previously been taking chloral, and expressed themselves as having a more quiet and longer sleep after the sulphonal. In a few cases which had been quite obstinate, a few doses seemed to establish the normal habit, and so far no return of the insomnia has occurred.

A dose of half a drachm taken by myself produced in about an hour heaviness of the eyes, and slight vertigo on walking, followed by a quiet sleep of eight hours. The only after-effect noticed was slight drowsiness, which disappeared in two or three hours.

Although these few cases are insufficient to be of much avail, I give them in the hope that thereby others who have suitable opportunities may give the drug a more extended trial. So far as these few cases go, they accord with previous reports, and seem to indicate that we may find in sulphonal a valuable addition to our hypnotics, and an aid in the treatment of an affection sometimes very troublesome.

Correspondence.

LETTER FROM PARIS.

The New Buildings of the Pasteur Institute.—Typhoid Fever simulated by Fatigue.—The Eschscholtzia californica.—Methyl Chloride in Neuralgia.—The Opening of the Clinics.—The Obstetrical Service.

PARIS, November 19, 1888.

MONSIEUR PASTEUR is the hero of this week again, as he has been often in medical circles of late years. On Tuesday the magnificent edifice that bears his name was opened by President Carnot, thus crowning the triumph of the great French chemist. The Pasteur Institute has been completed by public subscription, which, by the way, leaves a substantial balance to the credit of the institution after all expenses are paid. The architects and many of the workmen would not accept any pay, so that, the whole amount subscribed having been 2,586,680 fr., there remains a balance of 1,022,894 fr. after paying all bills. This capital ought to maintain the establishment for a long time to come, and prove or disprove the efficiency of the inoculation treatment in hydrophobia. We can only wait and see what the ultimate result will be. Notwithstanding all that is said against it, of people dying of rabies after the treatment, etc., it is still a

comfort to the victims of dogs, and time alone can tell if it is really of value. The new buildings erected are two handsome edifices, quadrangular in shape and four stories high. They stand in an attractive garden in the upper part of the city, and have every possible appliance for study—chemical laboratories and class-rooms, as well as operating-rooms—alongside of the inoculation hall. Outside there are stables and a large number of dog-kennels. All the buildings are plain but substantial, and the interiors are decorated with massive oak ceilings and panels. In fact, everything is admirably adapted to the purpose of the institution. Modern times have never seen such a tribute to talent, and it is to be hoped that great results will be achieved. The opening ceremony was quite French; the spacious library was crammed to suffocation with the *élite* of Paris, the celebrated Republican Guards Band played the "Marseillaise," while the President with his attendants arrived at one o'clock, and the speech-making began. M. Pasteur's forty years of labor in the cause of humanity and his great merits were glorified to the full by several speakers, including Professor Grancher, who is professor of children's diseases at the faculty and physician to the Infants Hospital, but he also has been the one who has done the larger part of the inoculation, as M. Pasteur, not being a physician, had no right to perform any operation on man. During the delivery of the laudatory speeches M. Pasteur was deeply moved, and while the record of his struggles was narrated he was completely overcome, and the tears coursed down his cheeks, so that when his turn came to speak he could not do so. The President of the Republic held his hands, and quite in French style they both cried and embraced one another, while many in the audience did the same. All the same, it was an interesting sight, and we must hope for the result of M. Pasteur's eloquent words (they were read by his son in his place). Two opposing laws, he said, appeared to be engaged in a death struggle—one of war and blood (in Europe), that was daily devising new weapons of destruction, and another of peace, labor, and security, that only thought of delivering mankind from the ills to which flesh was heir. "May the latter win, and certainly French science will never be forced in obeying this law of humanity to set the limit of human life further back."

French physicians, notably Professor Peter, M. Eloy, and others, have frequently spoken of the pathological states that are brought on by fatigue, and that are often allied to the typhoid states. It is rather difficult to define fatigue. All of us say "I am tired," but hardly any one can define or correctly describe what he feels. The dictionaries don't help us much. Littré called fatigue "a painful feeling with difficulty of moving or acting." Robin wrote: "Fatigue is from an exaggerated activity of all parts of the body endowed with internal or external sensibility, which determines a state of these parts that is transmitted to the nervous centers and there felt, and this perception has received the name of fatigue." This is a definition of a sense of fatigue, but not of the tired state itself, which must be a functional trouble profoundly felt in the anatomical elements themselves whose activity has been exaggerated and whose repair has been delayed or become impossible from some reason; so that fatigue is really a consequence of perturbations or a slowing up, even stopping, of the cell changes. It is really a pathological state having its degrees, its symptoms, and its changes that should be studied and taken into account by the practical physician. Its manifestations, such as lumbago, cramp, irritable heart, and muscular pains of a pseudo-rheumatismal character, are more or less well known, but it is particularly to the difficulty of diagnosticating between fatigued states and real typhoid ones that Dr. Peter calls attention. He gives the case of a man who had walked all the way from Lyons to Paris, begging by the way, but getting hardly anything to eat, and on

his arrival in Paris was received into a hospital as a subject of typhoid fever. His high fever and other symptoms quite bore out Dr. Peter's interne's diagnosis, but the history of the case changed the diagnosis as well as the prognosis, as the poor fellow left the hospital after a few days of good living and rest. The therapeutical indications of such cases are met with rest, baths, oxygenation of the tissues, and general tonics.

M. Bardet and M. Adrian have examined the American plant called *Eschscholtzia californica*, and they find that it really contains morphine, and this is the first time that a plant of any other order than the *Papaveraceæ* has been found to contain that alkaloid. It contains also another base, together with a glucoside, which may be very important when their characters have been studied. In any case the drug should be a valuable aid in replacing the opium alkaloid when necessary.

M. Bardet also has noticed that chloride of methyl can be applied very exactly by simply covering the skin of the part with a coat of glycerin. Considerable use is made here of the little tampons on which the methyl chloride is sprayed from the iron apparatus containing it, and these are passed over the nerve or part that it is desired to affect. Dr. Bailly was the first to use this tampon method, which has come into considerable use in sciatica and other neuralgic troubles. Now, according to M. Bardet, all that is needed is to brush a coat of glycerin over the part which one wishes to treat, and then allow the jet of methyl chloride to fall on the glycerin, which absorbs the drug and turns into ice, and then the patient feels the characteristic burning pain, which is prolonged more than with the usual method of using the chloride of methyl. This new method has also the advantage that the agent is easily brushed or wiped off and the effect arrested as desired. Debove first introduced the use of this freezing method, and certainly its revulsive effects have kept it in use for the last three years. Constant practice only increases the confidence in it. The only annoyance is the disagreeable smell of the methyl chloride as it leaves the iron apparatus.

Last week saw the opening of all the clinics of Paris, and we had quite a feast of lectures by the great professors. One of the most interesting was that of Professor Tarnier, who took his place as the head of the *Clinique des accouchements*, taking the place formerly held by Dr. Pajot as clinical professor of obstetrics. This new change leaves the place of professor of theory at the Faculty open, and it is also intended to throw open a portion of the old Maternity Hospital to a new clinic of obstetrics. Thus it is likely that two new full professors will be named for these posts. Dr. Budin and Dr. Pinard, the able *agrégé* professors, will probably have the places, and the study of obstetrics in Paris should, and probably will, become of the highest importance. Professor Tarnier, in his opening lecture last week, drew a parallel between the new and the old systems of the study of obstetrics. About a hundred years ago Tenon wrote on the accouchement service as it existed in the Hôtel Dieu of those days. The women were two and three in a bed, and the mortality was one in fifteen. The pauper children were kept with them, and they were actually let, or sold for twenty cents a piece, for begging purposes. Even in 1856, when Tarnier was interne first at the Maternity, the mortality was still very great. This lying-in hospital, which is now to be thrown open to men pupils as well as women (that is, midwives), has until now been open to the latter only. To-day what a difference! The beautiful *Clinique des accouchements* belonging to the Faculty, under Dr. Budin's charge last year, allowed all students to superintend at least from three to four accouchements, and some men who devoted themselves to it had charge of as many as thirty confinements. Besides this, there are now nine hospitals where confinement wards exist in Paris, and they

are in charge of competent accoucheurs nominated to the posts in the same way as the hospital doctors, by public competition, so that with the new maternity service open to male students and the new professors named, there will be no fewer than a dozen large services where medical men can see several births every day in the year, and undertake entire charge of them if they wish to. Under the new system Paris will certainly be ahead of all other places in the world for this special study. Some of the services have three births a day, and they are all directed by eminent accoucheurs, who freely offer lectures and any explanation to all.

There is evidently an intention on the part of the Paris Faculty to distance all competition in this matter, and with a city of over three millions, and women in the habit of being confined at these institutions, we shall be much mistaken if they do not succeed. The first *clinique d'accouchement* was formed in France in 1830, at Strassburg, by Flammand, and after him it was conducted by Stoltz, and only in 1834 did Paul Dubois start the first Parisian clinic from which these great results have come. Tarnier, in 1881, applied the antiseptic system to midwifery in Paris, and adopted a method of isolating his fever patients, and his mortality is now not more than one in a hundred. The hospitals give almost as good results, and, whatever may be said of antiseptics, certainly it can not be denied that its greatest triumph here is in midwifery.

LETTER FROM LONDON.

Paralytic Rabies.—Arthrectomy.—An Important Judicial Decision relating to Syphilis.

LONDON, November 20, 1888.

THE announcement of a paper by Mr. Victor Horsley on "Paralytic Rabies" was sufficient to draw a large audience at the last meeting of the Clinical Society. The case was one that created a good deal of stir at the time, because the patient had been submitted to M. Pasteur's treatment, and it was, of course, at once assumed by Pasteur's opponents that the treatment had killed him. The patient was admitted into St. Thomas's Hospital six weeks after being bitten by a rabid cat. He had been treated locally at the time of the accident, and, as I have already stated, had been sent to Paris for treatment by M. Pasteur; but on his return he began to have abdominal symptoms of an obscure kind. On the next day he complained of pain in the back, and on the following day there commenced an acute ascending paralysis, which carried him off in three days. Inoculation with the spinal cord proved that the disease was rabies. It was stated that experiments proved that the virus of the rabid cat was especially virulent. It was suggested as probable that Landry's paralysis was sometimes only paralytic rabies, and that acute myelitis also might be an acute specific disease. Dr. Bristowe stated that the case while the patient was in the hospital was thought to be one of rabies. There was no mental defect, no aberration, no dread of water, simply the water could not be swallowed; he believed that the disease had been derived from the cat and not from M. Pasteur's inoculations.

Mr. Horsley, replying to the comments on his paper, which were in themselves unimportant, said that the latest evidence went to show that the paralytic form of the disease did not follow inoculation if the animal had been previously inoculated with non-virulent material; very large quantities of virulent cords could be injected into a dog without producing rabies after it had undergone inoculation with non-virulent cords. As to the value of M. Pasteur's methods, the patients had been divided into three classes: the first including those bitten by

animals known to be rabid by the fact that they had bitten and killed other animals; the second, those bitten by animals presumed to be rabid and certified as such by veterinary surgeons; and the third, those bitten by animals only supposed to be rabid. The death-rate among Pasteur's patients belonging to the first of these classes only amounted to 2 per cent., while in Lancashire, which he regarded as the home of rabies, it was 16 per cent. He had been asked why the inoculations had not protected his patient. It might be that he was a person whom it was impossible to protect, or possibly the original virus from the cat was so strong that the patient should from the first have been protected with stronger virus or more of it on each day so as to bring him sooner under its influence. As to the identity or non-identity of paralytic rabies with Landry's disease, he pointed out that the absence of a history of having been bitten was not a reliable argument against rabies. As an instance of two specific animal poisons circulating in the same patient at the same time, he mentioned the case of a boy who was bitten by a dog suspected to be rabid, in whom, three weeks later, the wound having healed, scarlatina developed, and while the boy was convalescent from this, symptoms of hydrophobia appeared, and he died; the existence of rabies was proved by inoculation.

An interesting discussion took place at the last meeting of the Medico-chirurgical Society on arthrectomy, or erosion of joints, introduced by a paper of Mr. Edmund Owen's. The credit of the introduction of this operation belongs to a provincial surgeon, Mr. Wright, of Manchester. The operation consists in scraping out the diseased and pulpy synovial membrane from the joint in cases of that form of disease, the cartilage joining the epiphysis with the shaft being left intact. The result of this is that the growth of the limb is not interfered with, a point in which it compares most favorably with excision. The operation would appear to be well suited for all those forms of joint affection which have no tendency to spontaneous recovery, and in which the disease does not begin in the bones. The patient is, of course, left with a stiff joint, but that is better than the shortening entailed by excision and better than the result of amputation.

A case of immense importance has just been settled in our law courts. A man had been convicted on two counts of an assault upon his wife, the assault being that he had infected her with syphilis. He appealed, and the case was argued before a full bench of judges some months ago, and, having taken time to consider, they have quite recently given their decision. They were not agreed—like doctors, they seldom are—but a very considerable majority were in favor of quashing the conviction. They did not think that the laws as they stood at present had ever been meant to have such an interpretation put upon them, and, though expressing the utmost abhorrence of the deed, they declined to afford a precedent the full consequences of which no one could possibly foresee. The judges no doubt were quite right; an opposite decision would have led to endless litigation and domestic misery, and would not in any way have contributed to the decrease of syphilis. A re-enactment of the Contagious Diseases Acts on a larger scale and in a more stringent form would no doubt in a very short time effect a marked reduction in the number of infected people in this country, but there is very little prospect of their being again put in operation.

Death from Hydrophobia.—A man named Harman died last Saturday, June 2d, in Barrington's Hospital, Limerick, from hydrophobia. About three months ago deceased was bitten in the hand by a stray cat, but no symptoms of the dread malady supervened until the evening of May 30th.—*Brit. Med. Journal.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & CO.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 22, 1888.

THE MANAGEMENT OF CONSULTATIONS.

A *feuilletoniste* who signs himself "Dr. Chero" has been contributing to the "*Revue générale de clinique et de thérapeutique*" a series of letters to a young practitioner on certain points in medical ethics. In one of them he deals with the subject of consultations. Consultations, he says, are as much in vogue in France now as they were in the time of Louis XIV, and, save for the pomp and circumstance that were then made the accompaniments of all undertakings, they are much of the same character. This shows, he remarks, that, if ridicule kills, it kills very slowly, for consultations figured prominently in the medical affairs that were unmercifully caricatured by Molière. A consultation has often the double advantage that it suits alike the physician and the patient and his family. But it should be managed properly, that is to say, by the physician in attendance.

The family physician may properly ask for a consultation whenever there is doubt as to the diagnosis, whenever a considerable operation is to be performed, whenever the services of a specialist are needed, or whenever the responsibility of the case is too heavy for one person to bear alone. It may be added, as was inculcated by the late Professor Gilman, of New York, that it is unreasonable and disloyal to "divide" the responsibility by shifting it all on to the consultant. It is often wise and proper, and indirectly for the patient's benefit, to ask for a consultation for no other purpose than to strengthen or re-establish the confidence with which one is regarded by the patient or his friends.

But it sometimes happens that the waning of confidence first shows itself in a proposal for a consultation from the family. This should be forestalled whenever it is possible; the attending physician should endeavor to make out when there is a consultation "in the air," so to speak, and should take the bull by the horns by asking for it himself. Thus he obtains the advantage of appearing to have things his own way, and will be considered more entitled to name the consultant, with whom, moreover, he will find himself more on a footing of equality. Sometimes, however, the demand for a consultation can not be foreseen; it should then be acceded to promptly and gracefully, no matter if there is no good reason for it. "Dr. Chero" remarks that there are some persons, particularly the big-wigs of suburban localities, who always make it a point of honor to make a show of having two doctors whenever a case of illness in their families lasts more than a few days. Even such persons' demand for a consultation should never be openly opposed, although, unless it is properly managed, it is prone to result in unpleasant inferences as to the family physician's incompetency.

But there is one way of robbing it of its sting, and that is by making some such remark as this: "I have no objection to a consultation, if you wish for it, but I must tell you beforehand that the disease will be cured within" such or such a period of time. After the result has been found to justify the prediction a few times, the doctor will be credited with having known what he was about, and his patients will have all the more confidence in him.

A consultation having been agreed upon, according to "Dr. Chero," the family has the undeniable right to choose the consultant, although the choice is often left to the attending physician. Ordinarily, he thinks, no opposition should be made to the preference expressed by the family. In this we can not agree with him; it is our decided impression that a physician in whom the patient and his friends have not confidence enough to allow him the choice had better retire from the case altogether. Even "Dr. Chero" admits that there are circumstances under which the physician in attendance is warranted in following this course, as when a callow graduate is suggested, simply because Mr. X. or Mrs. Y. has "heard of his having done wonders in a similar case."

THE REMOVAL OF HOOK-SHAPED FOREIGN BODIES.

ONE of the most acute of American physicians, Dr. Morrill Wyman, of Cambridge, Massachusetts, is reputed to have once relieved a small boy of a fish-hook that he had swallowed by the clever device of slipping a perforated bullet over the line, which fortunately was hanging from the boy's mouth, causing him to swallow the bullet, and then drawing upon the line, the bullet guarding the tissues against injury from the hook during the process of extraction. But the small boy, owing doubtless to the special Providence that watches over him, rarely feeds on fish-hooks, so that Dr. Wyman's expedient, ingenious as it was, is more likely to be handed down in anecdote than to serve as a precedent in actual practice. Most of us are not in pressing need of a device for removing fish-hooks from the stomach—not so much, indeed, as of a trick for enticing hair-pins from the urethra—but it happens now and then to almost every practitioner to find himself face to face with the task of disengaging some hook-shaped body that has become imbedded in the tissues. In such a case M. Le Fort, of the Necker Hospital, Paris, lately made use of a procedure which we find detailed in a clinical lecture published in the "*Union médicale*" for October 18th. The manipulation, however complicated it may seem at first thought when described as *par version, bascule et propulsion*, was really very simple. Undoubtedly it has been resorted to by many practitioners, for it would suggest itself at once to a man of ordinary ingenuity; but, as we do not remember to have seen it described in print, we think it may prove of interest to our readers.

The patient was a lad who, nine months before his admission into the hospital, had been struck upon the cheek by a person who held a button-hook in the hand with which the blow was given. The pain of the blow was very great, and

the lad at once perceived that the person who had struck him now held only the handle of the button-hook. There was a punctured wound of the cheek, from which a free flow of blood took place, situated in front of the masseter muscle and at the level of the lower teeth. An hour afterward there was considerable swelling of the cheek, and on the following morning, the swelling being persistent and accompanied with rather sharp pain, a pharmacist was consulted, who, as the patient said, "corked up the hole in his cheek." At the end of two or three days the wound had healed and the swelling had subsided, but there was some induration perceptible to the patient, who, however, felt no further pain and no embarrassment of the movements of the jaw. This quiescent state of things continued until about a month before the lad's admission into the hospital, when an inflammatory redness appeared at the site of the wound and an opening formed from which a little shaft of iron protruded to the extent of about a third of an inch. The hooked extremity was directed backward, and was so engaged in the masseter muscle as not to admit of removal by direct traction without great risk of serious injury. Having enlarged the opening by a slight cut, M. Le Fort depressed the presenting end of the piece of iron and gradually worked it backward until he had reversed its original position. The hooked end now lay forward, and was easily made to emerge from the wound. Reference was made also to a somewhat similar case in which, some years before, M. Le Fort had extracted from a lady's hand a hook-shaped English implement for drawing corks.

MINOR PARAGRAPHS.

THE COMPARATIVE NUTRITIVE VALUE OF THE ANIMAL AND VEGETABLE ALBUMINS.

DR. S. RUTGERS, of Rotterdam, gives an account in the "*Zeitschrift für Biologie*" of certain dietetic experiments that he has made upon himself and his wife, a summary of which appears in the "*Centrablatt für klinische Medicin*." From the 13th of March to the 16th of April each of them consumed daily 2,250 grains of meat, 9,000 grains of milk, 750 grains of butter, 3,000 grains of white bread, 195 grains of zwieback, 4,500 grains of potato, 1,800 grains of rice, 1,050 grains of cane-sugar, half an orange, 600 grains of Tokay wine, 900 grains of red wine, and 75 grains of tea; and from the 17th of April to the 21st of May each of them took 4,230 grains of green peas, 1,500 grains of dried peas, 1,500 grains of small white beans, 1,238 grains of butter, 193,005 grains of meat extract, 2,000 grains of white bread, 195 grains of zwieback, 1,500 grains of potato, a little tea, 390 grains of Tokay wine, 900 grains of red wine, and half an orange. Daily comparisons were made of the weight of the two persons, of the quantity, specific gravity, and nitrogenous constituents of the urine, and of the weight of the faeces. In one of them the weight remained about constant; in the other there was a decided loss during the first period, which was not so marked in the second period. Although they often longed for a more varied diet, the articles to which they had restricted themselves gave rise to no repugnance. There was no feeling of hunger or of any insupportable craving for particular articles of food or drink. Both felt well all the time. During both periods the nitrogen excreted by the kidneys and the intestines did not differ materially from the normal amount. The

inference is that the animal albumins ordinarily taken as food may be replaced by those of vegetable origin without disturbing the nitrogen balance. It is mentioned that beans and peas proved very troublesome by giving rise to abundant intestinal gas and faeces, while meat and rice caused little of either—facts that involve many contra-indications to an exclusively vegetable diet. The acidity of the stomach and of the urine was notably reduced by the vegetable food.

THERAPEUTICAL FLAGELLATION WITH NETTLES.

THE "*Gazette hebdomadaire des sciences médicales*" gives an abstract of an account in a Russian journal, by Dr. Frankowsky, of the revulsive and excitant effects that may be obtained by flagellation with nettles. The application is to be continued until urticaria is produced. According to the author, the nettle is to be preferred to other revulsives and excitants, because of the celerity of its action and its freedom from danger, in such conditions as migraine, ataxia, paralyses, anæsthesia, asthma, amenorrhœa, impotence, and rheumatism. It is said to cause neither maculæ, scars, suppuration, nor any disturbance of the kidneys.

THE ARTISTIC CAPABILITIES OF INDIA-RUBBER.

"PUNCH" once gave a decided hint in this direction, in the famous garden scene in which Napoleon III was represented as engaged in blowing up a little rubber effigy of his uncle and, looking up at an heroic statue of Julius Cæsar, exclaiming, "Aha! Monsieur, I shall soon make him so big as you!" But that was only a hint; it has remained for the Davidson Rubber Company, of Boston, to better the instruction. In a pad calendar for the year 1889, recently issued by that company, we find an assortment of pictorial representations of articles in rubber of the variety of which nobody could complain, accompanied by printed epigrams so choice as to make us wonder they were not put in the form of sonnets. Here is the family syringe, with its pipes falling gracefully into serpentine lines of beauty, together with the "purity nipple," the colpeurynter, and a rich array of other artistic appliances, of which the *pièce de résistance* seems to be the "sanitary cover" (a sort of extinguisher for a *pot de chambre*). *Ter quaterque beati* those to whom it is given to beautify their walls with this æsthetic production!

A SANITARIUM IN THE CATSKILLS.

SOME weeks ago we called attention to a few of the features of the Catskill region as a health resort, and especially to its availability in consequence of the ease of reaching it. It has long been a matter of surprise that special institutions for the reception of invalids have not been established there as well as in more remote districts of no greater natural virtues. We are pleased to learn, therefore, that the Catskill Mountain Sanitarium is now about being opened at Tannersville, in Greene County. The sanitarium is in charge of Dr. H. M. Wilson, Jr., formerly of Baltimore, a gentleman of most creditable professional attainments and general culture. It is not to be doubted that Dr. Wilson's professional brethren will be glad to avail themselves of the opportunity offered by his sanitarium of sending patients to the Catskills.

THE MANHATTAN EYE AND EAR HOSPITAL.

THE "Nineteenth Annual Report of the Board of Directors" of the hospital, recently issued, is a reminder of the continued usefulness of this institution. We learn that it is sought to endow the hospital by means of a fund named the "C. R. Agnew

Memorial Fund," in fitting recognition of the services rendered by its founder, the late Dr. Agnew, whose example in giving time and money to further the work of many a charitable undertaking ought, as the directors justly say, to make the mere connection of his name with the fund "a touching appeal to every benevolent heart."

NATIONAL HEALTH LEGISLATION.

IN the article on this subject contained in our last issue we followed the text of the bill as published. A copy from the Public Printer's office shows, however, that the proposed health commissioner is to "hold his office until he is seventy years of age, *unless sooner removed by the President.*" That part of the section printed in Italics removes the constitutional objection we made against it in that respect. The material objections to the rest of the bill remain as we stated them.

THE POST-GRADUATE HOSPITAL.

IN their "Third Annual Report" the board of directors of the hospital very properly ask for pecuniary assistance to enable them to clear off the indebtedness about to be incurred in a purchase of additional property and to increase the usefulness of the institution, notably by the establishment of a lying-in ward. The medical school with which the hospital is connected is said to be self-supporting, but the hospital itself, it is added, like all charitable institutions, is constantly in need of funds. A special appeal is made to the women of New York.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 18, 1888:

DISEASES.	Week ending Dec. 11.		Week ending Dec. 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	23	7	24	6
Scarlet fever.....	164	31	239	37
Cerebro-spinal meningitis....	0	0	2	2
Measles.....	351	23	306	21
Diphtheria.....	136	32	165	26
Small-pox.....	1	0	0	0

The Philadelphia Polyclinic has established a three-months' special course in ophthalmology, including systematic didactic instruction and quizzing, with three hours' clinical work daily.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 9 to December 15, 1888:*

BAXTER, JEDEDIAH H., Colonel and Chief Medical Purveyor, will, by direction of the Secretary of War, proceed to St. Louis, Missouri, and Hot Springs, Arkansas, on public business connected with the Medical Department, on completion thereof to return to his proper station. Par. 13, S. O. 289, A. G. O., Washington, December 12, 1888.

TOWN, FRANCIS L., Major and Surgeon, is relieved from duty at the post of San Antonio, Texas, and will report in person to the commanding officer, Presidio of San Francisco, California for duty at that station, relieving Major Henry R. Tilton, Surgeon, and by letter to the commanding general, Department of California. Par. 19, S. O. 286, A. G. O., Washington, D. C., December 8, 1888.

TILTON, HENRY R., Major and Surgeon, upon being relieved by Major Town, will proceed to West Point, New York, and

report in person to the Superintendent of the U. S. Military Academy for duty at station, relieving Major Charles F. Heizmann, Surgeon. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

HEIZMANN, CHARLES F., Major and Surgeon, upon being relieved by Major Tilton, will proceed to San Antonio, Texas, and report in person to the commanding officer of that post for duty, and by letter to the commanding general, Department of Texas. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

FINLEY, JAMES A., Captain and Assistant Surgeon, is relieved from duty at Fort Buford, Dakota Territory, to take effect upon the expiration of his present sick leave of absence, and will report in person to the commanding officer at Fort Assiniboine, Montana, for duty at that post. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

CHAPIN, ALONZO R., Captain and Assistant Surgeon, is granted leave of absence for fourteen days, to commence on or about December 24, 1888. Par. 1, S. O. 261, Headquarters Division of the Atlantic, Governor's Island, New York city, December 11, 1888.

LA GARDE, LOUIS A., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of three months. Par. 15, S. O. 290, A. G. O., Washington, December 13, 1888.

JARVIS, NATHAN S., First Lieutenant and Assistant Surgeon, is, by direction of the Secretary of War, relieved from duty at Fort Leavenworth, Kansas, and will report to the commanding officer at Fort Lewis, Colorado, for duty. Par. 14, S. O. 290, A. G. O., Washington, December 13, 1888.

JOHNSON, RICHARD W., Captain and Assistant Surgeon, is relieved from duty at Fort Adams, Rhode Island, and will report in person to the Superintendent of the U. S. Military Academy, West Point, New York, for temporary duty at that station. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 15, 1888:*

PENROSE, THOMAS N., Surgeon. Ordered for examination preliminary to promotion.

OBERLY, A. S., Medical Inspector. Ordered before the Retiring Board.

DICKSON, S. H., Passed Assistant Surgeon. Detached from the Richmond and ordered to the Pensacola.

ASHBRIDGE, RICHARD, Passed Assistant Surgeon. Detached from the St. Louis and ordered to the Richmond.

AUZAL, ERNEST W., Assistant Surgeon. Promoted to Passed Assistant Surgeon.

WIEBER, F. W. F., Assistant Surgeon. Promoted to Passed Assistant Surgeon.

Society Meetings for the Coming Week:

MONDAY, *December 24th*: Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *December 25th*: New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Lewis (quarterly), N. Y.; Boston Society of Medical Sciences (private).

WEDNESDAY, *December 26th*: New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of

Albany; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

THURSDAY, *December 27th*: New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

FRIDAY, *December 28th*: Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Letters to the Editor.

THE SHARON SPRINGS.

SHARON SPRINGS, N. Y., *December 8, 1888.*

To the Editor of the New York Medical Journal:

SIR: In your editorial, "Medical Journal," December 1, 1888, in the last part, after insisting upon the necessity of a discriminating and intelligent administration as of first importance in the success of water applications, you mention in commendation certain European sulphur springs, but no allusion is made to the sulphur springs of this State, although certainly several of these have a merited and sustained reputation.

In the "Rapport général sur le service médical des eaux minérales de France," made to the "Académie," and "read and adopted in the séance of April 3, 1874," it is stated that "le mode d'administration et l'emploi des eaux prennent aussi une importance égale à la minéralisation, car la manière de les appliquer peut modifier, changer même leurs qualités naturelles et même leur en communiquer de nouvelles, suivant la température et la dose auxquelles on les emploie, les agents balnéaires variés qui en secondent l'application. Elles peuvent produire des effets diurétiques, sudorifiques, excitants, toniques, sédatifs, résolutifs, révulsifs, etc., selon le but que le médecin se propose."

Recognizing the importance of this subject, it has been our effort for several years to introduce and develop at this spring the same varied and scientific applications of sulphur water that are employed at the European sulphur springs enumerated by you, and that are known by experience to be of value, and it has been our special endeavor to persuade all who visit this place to use the waters only and always under the constant advice and watchfulness of physicians. It is strange, but none the less true, that it is really difficult to induce a free-born American citizen to submit to such *régime at home*, however willing he may be to observe strictly a prescribed routine *abroad*. Those physicians who have visited us, and personally inspected the various applications, have expressed their gratification that these methods of employing sulphur water are now within reach in this country.

We do not seek a free advertisement, we assure you; the establishment is closed at this season, and we do not advertise in the winter. But we do think that, in a general and forcible article relating to this subject by a professional author, our efforts, as demonstrated, are entitled to recognition, and that an invidious distinction should not be made in favor of foreign sulphur springs. It would be quite as sensible to seek foreign medical services, when equally able advice can be procured at home, as to visit foreign springs solely to obtain methods already in operation here.

We should be very glad to have you visit us, as our guest, during the coming season, so that you may personally see what we have accomplished in the direction indicated.

JOHN H. GARDNER & SONS.

* * It is true that in the article referred to we did not mention the Sharon Springs, but we did mention several American springs with commendation. We are glad to say now that we know of no reason to question the efficiency and good management of the Sharon waters. Reference to our article will show we think, that no invidious discrimination was intended.

SYMPATHETIC VOMITING.

228 WEST THIRTY-FOURTH STREET, NEW YORK, *December 10, 1888.*

To the Editor of the New York Medical Journal:

SIR: Concerning the sympathetic vomiting of husbands whose wives are pregnant and affected with the morning sickness, I have found it to be a well-rooted impression among many of the laity that it is an event of frequent occurrence. I had never seen an undoubted case of it, however, until last month, when a lady and her husband called on me together, both complaining of severe morning sickness. The husband's sickness occurred every morning, but only after the wife had vomited or complained of nausea, when he would at once follow suit. I prescribed oxalate of cerium and a glass of milk before getting out of bed for each patient, with little success. The administration of an eightieth of a grain of atropine every morning to the wife only, relieved her symptoms, upon which the husband ceased to be troubled.

The trouble, to my mind, is readily explained. Attempts at vomiting on the part of a patient are very frequently enough to turn the stomach (as the laity term it) of bystanders who themselves have rather weak stomachs. We know that on board ship persons are suddenly attacked with vomiting through merely being near some other person who is seasick, though they have felt perfectly well beforehand. A lady who was walking with me in the street was strongly nauseated while passing a drunken man who was vomiting on the sidewalk a year ago. I believe that in the husbands' cases the trouble is imitative in part, and partly an actual nauseated feeling at beholding the efforts at and the actual vomiting of their wives. If I happened to come across another such case as I have related I should direct the husband and wife to sleep in separate rooms for a few nights and to have their breakfasts separately. If, as I am persuaded, the husband felt no sickness during the time of separation, I should be inclined to think my explanation pretty well proved, although, in some cases, I do not doubt that he might feel sick a few mornings from mere habit, or from some false mental impression of some more remote sympathetic cause than the one I have advanced as the true one.

GEORGE G. VAN SCHAICK.

48 EAST TWENTY-SIXTH STREET,

NEW YORK, *December 17, 1888.*

To the Editor of the New York Medical Journal:

SIR: A striking instance of morning sickness in the male has recently come under my observation. Mr. Z. married in the spring of 1888. His wife became pregnant in July. The first symptoms she observed were those of morning nausea and vomiting, which were unusually severe, lasting until eleven or twelve o'clock. Ordinary remedies (lime-water, ice, brandy, champagne) seemed to have no effect. No physician was called. The husband consulted me early in October, stating that for ten days his stomach had been in very bad condition, that after rising in the morning he was almost daily seized with distressing nausea and vomiting to an extent to preclude the possibility

of taking food, but that this sickness soon passed off after his leaving the house. He had reached a point of emaciation and weakness which forced him to consult a physician. Upon questioning the patient, he remarked, among other things: "The queer thing about it is that when I am sick my wife is very well." It subsequently proved that they were never simultaneously ill. I followed the case for a week, giving the usual remedies—such as cerium oxalate, liquor potassii arsenitis, tincture of nux vomica, etc.—but nothing exercised control over the sickness of either.

The pair occupied the same bed, and the husband noticed that before rising, and when his stomach was already beginning to feel the approaching nausea, if his wife lay close to him he had at once an increase of the gastric irritability. This, he informed me, he had distinctly observed before I had informed him of my opinion as to his trouble.

I sent the wife to her mother's for a week. She left on Sunday afternoon. On Monday morning Mr. Z. arose, feeling, as he said, "as well as he ever did in his life." His wife while away was troubled with nausea, but not to the degree of intensity as before. She would not remain away for a week, but returned on Thursday afternoon. On Friday morning her husband was again sick, but not so severely as before. This lasted for a week, but since the middle of November he has been free from nausea, and the sickness of his wife has gradually abated. Both husband and wife are of active nervous temperament.

MORTON GRINNELL.

A CONTRIBUTION TO THE ETIOLOGY OF SEASICKNESS.

NEW YORK, December 3, 1888.

To the Editor of the New York Medical Journal:

SIR: Following the recent storm, which did so much damage along the Atlantic coast, a party of adults and children visited the beach at Monmouth Beach and Seabright, N. J., to observe the effects of the storm upon the cottages, and especially to see the house which some of them had occupied during the past summer. The sea had washed away the foundation of this house, so that one side had sunk and the whole house was inclined at a considerable angle. The children of the party ran ahead and found an entrance, but reappeared in a few moments and urged their mother not to go in, as it would make her seasick. The entire party went in, however, and the effect of the displacement of the lines of the rooms was to make them all more or less dizzy. The mother referred to, with some effort, owing to the oblique position of the floor, succeeded in getting to the further end of the hallway, when she was so overcome by "seasickness" that she had to be carried out.

F. A. CASTLE.

MEDICAL SUPERSTITIONS.

NEW YORK, December 8, 1888.

To the Editor of the New York Medical Journal:

SIR: In the issue of your Journal of December 8th you refer to some very interesting medical superstitions related in the work of M. Challamel. A young girl of fifteen, of Irish parentage, brought her little brother to my clinic for treatment. I observed a chalazion on her left lower lid, and told her she had a small tumor, which she had better allow me to remove. She replied no; she knew what it was and could take it away herself when she wished. I asked what her treatment would be. She said her grandmother had told her that this could be removed by pointing at it with a steel knife and fork for nine days. On questioning her further, I found that it was necessary to point with a knife one day and a fork the next, and that it was necessary to point with each once

every day for nine days. I asked her if she had ever seen a sty removed in this way. She said no, but her grandmother had.

I expressed the desire to make the acquaintance of her grandmother, with a view to learning more about this method of cure of styes. The girl replied that I could not make her grandmother's acquaintance, as she was dead.

I finally gained her complete confidence, and the chalazion was removed *secundum modum*.

I report this, as I consider it of interest in connection with medical superstitions.

J. HERBERT CLAIBORNE, JR.

BOILED SILKWORM-GUT SUTURES.

93 E. FOURTH STREET, CINCINNATI, December 3, 1888.

To the Editor of the New York Medical Journal:

SIR: In your issue of December 1st I read the article "Boiled Silkworm-gut Sutures," by Dr. Carr, of the Columbia Hospital, Washington, with much interest.

I can testify that for perinæorrhaphy, trachelorrhaphy, and other operations it has no superior. I never keep it in *any* antiseptic fluid, nor do I boil it—simply clean it before using—and the results are all that one could ask for. Rarely a stitch abscess have I to record. Nor do the "bugs" or the thirty-nine amphibious little imps interfere with the healing process. Much valuable time is gained by not boiling, and the results are no better with boiled sutures than with those not boiled.

EDWIN RICKETTS.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirteenth Annual Meeting, held at Washington, September 18, 19, and 20, 1888.

The President, Dr. ROBERT BATTEY, of Rome, Ga., in the Chair.

THERE was a large representation of the fellows present, and also several guests, among whom were Sir Spencer Wells, Dr. Graily Hewitt, and Dr. Priestley, of London.

Dr. SAMUEL C. BUSEY, of Washington, made a brief address of welcome, in which he alluded to the advance in medical science, and to the prosperity of the American Gynæcological Society, which now occupied the foremost position among national associations. He alluded to the distinguished foreign guests.

Palpation of the Ureters in the Female.—Dr. HOWARD A. KELLY, of Philadelphia, read a paper with this title, in which he opened by affirming that palpation of the ureters afforded a sure method of recognizing disease of these ducts, and hence disease of the kidneys, which so frequently accompanied the former. The ureters were liable to share in vesical inflammation (especially that form which was of gonorrhœal origin), while calculi might be impacted in them, or they might be displaced or occluded by adhesions or displacements and neoplasms of the uterus, especially carcinoma. They were sometimes tied during the removal of abdominal tumors, and might be injured in operations for vesico-vaginal fistula. It was therefore quite important for the gynecologist to be able to recognize the ureters in health and disease. The methods of examination were by catheterization and inspection. To inspect them it was necessary to split the vesico-vaginal septum, and to look for the ureteric openings, into which a catheter could be passed directly. Grünfeld had tried to catheterize the

ureters by the aid of the endoscope, but with indifferent success. Catheterization was practiced by Simon after introducing the index-finger into the bladder and feeling the ureteric openings: this method was not only very difficult, but there was danger of lacerating the urethra. Pawlik's method was preferable. The patient being placed in the exaggerated lithotomy posture, a Simon's speculum was introduced, and the anterior vaginal wall clearly exposed. A fine silver catheter of peculiar shape was introduced into the bladder. Its point could be seen by the eye to glide over the floor of that organ and to follow the diverging folds in the vesico-vaginal septum, which extended upward from the neck of the bladder on either side of the cervix. The point of the instrument would be felt to glide over the ureteric opening. It was then drawn backward slightly, then pushed forward, and would make a pocket in the anterior vaginal wall. A few drops of urine would escape on introducing and withdrawing the instrument. It was important not to use force, or to pass the catheter beyond the pelvic brim. In palpating the ureters the finger was introduced as high as possible along the lateral wall of the pelvis, and was then carried downward until a cord was felt, which was then traced along its course. In some cases, especially during pregnancy, the ureters could be mapped out bimanually. They could often not be felt at all, or the obturator arteries and nerves, or bundles of fibrous or muscular tissue, might be mistaken for them. Several cases occurring in the reader's practice were reported, in which supposed vesical trouble of long standing was found to be due to ureteritis. Dr. H. C. Coe had related to him three recent cases in which he had discovered at autopsies obstruction and dilatation of the ureter, which might have been discovered during life, if palpation had been practiced. He was not prepared to discuss the question of treatment, as the subject was still somewhat indefinite.

Dr. W. M. POLK, of New York, thought that the subject of the paper was one of much interest. The slow progress in the diagnosis and treatment of disease of the ureters was due to the inaccessibility of the ducts. He had tried Pawlik's method five years before, but without satisfactory results. Subsequently he had made an opening into the bladder in order to reach the ureteric openings directly. He had often been able to detect an enlarged ureter by palpating it through the rectum, especially during pregnancy. He had found no difficulty in compressing the ureter through the rectum by the method which he had devised, but was unable to keep up pressure long enough to secure practical results. It could be compressed by introducing a prostatic catheter into the bladder and pressing its convex side against the pelvic wall, while the hand, or a proper instrument, was inserted into the rectum.

Dr. H. T. BYFORD, of Chicago (a guest of the society), said that he had succeeded in palpating the ureters in one hundred cases by a new method, which consisted in carrying the finger outward from the cervix uteri as a center, and pressing firmly against the vaginal roof until a cord was felt, which was then traced downward. In introducing the catheter he relied upon the touch alone. The ureter, or inter-ureteric ligament, having been felt through the anterior vaginal wall, the catheter was passed into the urethra and slipped backward and forward over the inter-ureteric ligament until a small ridge was discovered. This was situated at the opening of the ureter, and into it the point of the instrument could be made to glide with a little manipulation.

Dr. W. H. BAKER, of Boston, thought that considerable practice was necessary in order to palpate and catheterize the ureters. He had made repeated trials before he had been successful. It was often important to decide whether the ureters were diseased or not before performing cystotomy for inflam-

mation of the bladder. He had met with a case of malposition of the ureter, which opened near the meatus instead of into the bladder. He had been successful in restoring the parts to their natural relations with each other, so that the ureters had their outlet into the bladder, as in the normal anatomy.

Dr. H. C. COE, of New York, described several cases in which he had discovered ureteritis post mortem, the affection being due to obstruction of the ureter from the pressure of perimetric adhesions or indurations, and not to an extension of inflammation from the bladder. In each instance there was pyelitis or pyonephrosis on the affected side. At an early stage of the condition it might have been accessible to direct treatment by means of catheterization. In no case was there complete obstruction, hence the ureter was always hypertrophied more than dilated.

Dr. B. McE. EMMET, of New York, referred to Dr. T. Addis Emmet's methods of inspecting the mouths of the ureters through an artificial fistula in the bladder. The canals could then be treated directly if necessary, although in most cases the symptoms were doubtless due to extrinsic causes, or to an inflammation of the bladder.

Dr. KELLY, in closing, said that he had tried the method recommended by Dr. Byford, but had found it less practicable than Pawlik's. He believed that many cases of urinary trouble after laparotomy were due to compression of the ureters by inflammatory indurations.

The Cause and Treatment of Urethrocele.—Dr. T. ADDIS EMMET, of New York, contributed a paper with this title, for an abstract of which see page 449.

Dr. PRIESTLEY, of London, said that he had written a paper on urethral cysts, or urethrocele, several years before, and had recently had a discussion with Dr. Emmet on this subject. He had seen many cases, some of which were not of traumatic origin. In one instance the supposed urethrocele proved to be a sebaceous cyst in the urethro-vaginal septum, which projected from the vaginal orifice and discharged sebaceous material through the urethra.

Dr. A. J. C. SKENE, of Brooklyn, criticised the writer's pathology. There were two distinct features to be considered—prolapse and laceration—which were separate and referable to different causes. Dr. Emmet had stated that urethrocele was confined to the lower portion of the canal, whereas in the speaker's experience it was most commonly due to a downward dislocation of the entire urethra, although the sacculation might indeed be confined to the lower third. This dislocation was due to the tearing away of the urethra from the pubic symphysis, which was by far the more common accident during labor. Transverse or longitudinal laceration from this cause must be more rare than Dr. Emmet affirmed, at least the speaker had never been able to find it in his post-mortem examinations of subjects who had died immediately after labor, dislocation of the entire canal being the rule. He did not see what was accomplished in these cases by making a button-hole; it might be useful in cases of sacculation, but not when the entire urethra was displaced. It was no more than just to state that this lesion had been clearly described by a former fellow of the society (Dr. Bozeman) in a paper read several years ago, although he might not have suggested this operation as a cure for it.

Dr. W. T. LUSK, of New York, said that he had tried the button-hole operation in the case of patients who had been long under treatment for vesical trouble, and had been surprised at the successful results. It was applicable to a limited class of cases. He was inclined to leave the fistula permanently.

Dr. H. A. KELLY, of Philadelphia, alluded to cases in which

Dr. Skene Keith had performed the operation successfully. It was important to distinguish real from false urethrocele. Since the wall of the urethra, in passing under the symphysis, moved through a smaller arc than that of the vagina, the latter would naturally be the first to become prolapsed.

Dr. J. DUNCAN EMMET called attention to the wide difference between a urethrocele, which involved the entire urethra, and sebaceous cysts which were situated in its wall. In reply to questions by Dr. Engelmann, of St. Louis, he stated that if a patient was perfectly relieved by the button-hole operation, urethrocele was not likely to recur after the fistula was closed, unless there was a fresh injury to the urethra.

The Treatment of Pelvic Abscess.—Dr. R. STANSBURY SUTTON, of Pittsburgh, Pa., read a paper with this title, in the beginning of which he explained that his paper was limited to a consideration of abscess following a pelvic cellulitis, of either puerperal or non-puerperal origin. Abscesses might be septic or aseptic. Parametritis might follow gonorrhœal or other septic infection, laceration of the cervix, etc. In some instances it seemed to be idiopathic. The prophylactic treatment consisted in regulating the bowels, giving hot injections and antipyretics, and applying first ice-bags to limit inflammation, and subsequently hot poultices to promote suppuration. If an abscess formed, it should be explored by the aspirating-needle as soon as fluctuation was distinct, then opened freely and drained. Gynecologists usually met with chronic abscesses—hard, immovable masses in the pelvis—which occasionally discharged pus, usually into the rectum. If they opened into the vagina, recovery was almost certain to follow. Mr. Tait had shown that when the abscess rose above the pelvic brim it could be reached and drained by laparotomy. The most difficult cases to cure were those in which there were old sinuses. Under these circumstances the walls of the sac might be scraped with a curette and an antiseptic fluid injected. If it communicated with the rectum, the patient should be etherized, the rectum explored, and a catheter introduced into the opening, if it could be found. After dilating the opening, the operator should again introduce the catheter and irrigate with bichloride solution (1 to 1,000) at intervals of a few days. Some cases were incurable.

Dr. WILLIAM GOODELL, of Philadelphia, said that he had never met with a pelvic abscess of gonorrhœal origin; he had, found pus in the tubes and ovaries from this cause, but not a true abscess. Sepsis was a common cause. Cases occurring in virgins were nearly always due to suppression of the menses from taking cold. He was accustomed to open abscesses by boring through the tissues with a pair of scissors, and then to dilate the opening and introduce a drainage-tube. If the abscess had opened into the rectum and the fistula was accessible, he inserted a bent probe into the sac, and, if he could feel its end in the vaginal vault, made a counter-opening and introduced a drainage-tube as before. He would not dilate the rectal opening, as gas and fecal matter might then enter the sac. Tait's plan of reaching the abscess from above was a good one, but there were cases in which the abscess was small, the opening high up in the rectum or bladder, and the sac never large enough to need to be opened by laparotomy. Under these circumstances the speaker had sometimes reached and opened the sac from above and then introduced scissors into it, and brought their points through the vaginal roof, thus establishing drainage. In case there was a fistula in the groin he also sought to establish a counter-opening in the vagina.

Dr. PARRISH, of Philadelphia, said that he had operated on several cases a few weeks after labor. He did not use the aspirator except for diagnostic purposes, as it was apt to increase the inflammatory action. He opened through the vagina, if possible, following Hilton's method of pushing a grooved di-

rector into the sac and introducing a dilator on it. He had in three instances opened the abscess extraperitoneally by performing laparotomy and stripping up the peritonæum from the pelvic wall until the abscess was reached. Drainage was quickly followed by recovery.

Dr. T. GAILLARD THOMAS, of New York, did not agree with the author as regarded treatment. There were three varieties of pelvic abscess—viz., the pus might be confined between the folds of the broad ligaments, it might be between the vagina and peritonæum behind the uterus, or in the areolar tissue between the bladder and the uterus. Another variety might be due to pyosalpinx, and was often unsuspected. Laparotomy might sometimes be avoided by draining a pyosalpinx. The sooner a pelvic abscess was opened, the better. The speaker's views on this subject had undergone a change. If a tumor of inflammatory origin had existed in the pelvis for a month or more, whether fluctuation existed or not, it should be explored, because it might be filled with pus. There was a great difference between puerperal and non-puerperal abscesses; the former were apt to travel rapidly and open through the abdominal wall, while in the latter the conditions were exactly the reverse. He who waited for constitutional symptoms to appear would wait very long. There were only two passages for the safe artificial evacuation of pus—namely, through a vaginal opening and through one in the abdominal wall. It should never be allowed to discharge into the rectum. The speaker had seen two cases of death from this cause. He was accustomed to reach these abscesses by dissecting off the posterior vaginal wall, thus getting nearer to them than he could by any other channel. The sac was then opened, the opening dilated, and a drainage-tube introduced. If the abscess was anterior to the uterus, he separated the anterior vaginal wall as if about to perform vaginal hysterectomy. Dr. Mathews Duncan had described movable abscesses that simulated subperitoneal fibroids. The speaker always opened abscesses with a pair of pointed scissors, after making a large opening in the vagina, boring rather than cutting; he then introduced a Goodell's dilator to enlarge the opening and finally inserted a soft-rubber tube, the lower end of which was split in two, the two halves being stitched to the edges of the wound. He irrigated the cavity with a two-and-a-half-per-cent. solution of carbolic acid, using bichloride (1 to 4,000) if septic symptoms developed. In performing laparotomy for pelvic abscess, provided he found it adherent to the abdominal wall, he introduced an old-fashioned exploring-needle, passed a bistoury along it, and inserted a drainage-tube. If there were no adhesions, he made an incision along Poupert's ligament, pushed the peritonæum forward, and opened the abscess with the finger, then inserted a tube and washed out the sac.

Dr. W. GILL WYLIE, of New York, did not accept the author's view of the pathology of these cases. He thought that cellulitis had been assigned too important a place in gynecology. So long as we regarded pelvic abscesses as situated mainly in the pelvic connective tissue we should continue to open them *per vaginam*. Nine out of ten of such abscesses resulted from salpingitis and oophoritis, as had been proved by laparotomists. If the abscess was of tubal origin, unless the patient's condition was too bad we should open the abdomen and remove the cause of the suppuration. Drainage *per vaginam* might relieve the acute symptoms, but it did not cure. If the patient's condition was threatening (as shown by fever and sweating) and the abscess pointed in the vagina, he would open it through the fornix, but even then he preferred to open the abdomen in order to see more clearly where to open the sac *per vaginam*. He preferred a median to a lateral incision in the abdominal wall.

Dr. POLK said that the question of the treatment of pelvic

abscesses depended entirely upon a proper appreciation of their pathology. If they were derived from the tubes, then it was necessary to perform laparotomy and to extirpate the tubes, and thus to effect a radical cure. The case was different when an abscess was extraperitoneal. The same question had lately been agitating general surgeons. Perityphlitic abscesses were formerly supposed to be limited to the cellular tissue; now it was known that they were nearly always due to perforation of the appendix. If the perforation took place into a mass of adhesions, the abscess might be secondarily extraperitoneal. The speaker formerly supposed that all pelvic abscesses resulted from cellulitis, but, on performing laparotomy in such cases, he invariably found a tube distended with pus, or else such a tube with pus encysted around it. By removing the tube and washing out the cavity the patient was cured. Nearly all pelvic abscesses were of tubal origin, and the treatment for them was laparotomy. Wherever pus pointed, there was the best place to open the abscess.

Dr. H. T. BYFORD rose to defend the method of treatment recommended by his father, Professor W. H. Byford—*i. e.*, to open pelvic abscesses *per rectum*. He did not believe, moreover, that these were all of tubal origin, and cited a case to support his opinion. It had been said that there were practically only two avenues for the evacuation of pus—through the vaginal and through an abdominal incision; this could not be absolutely maintained. In every case it was best to open the abscess in such a way that it would have the most direct outlet, even if this was through the rectum or the bladder. If the abscess pointed into the rectum, it would burst there; in most of the speaker's cases this had been their course, and the majority had healed. The attendant frequently failed to observe when this occurred; the patient might see a little pus in the stools, and then recovered rapidly. The speaker thought that more abscesses healed after rupturing into the rectum than after discharging through the vagina.

Dr. KELLY cited two cases of pelvic abscess in which the patients had high temperature and were much prostrated. In one case he opened the sac with Paquelin's cautery, evacuating several ounces of foetid pus, and irrigated the cavity, and the patient made a rapid recovery. In the second case the abscess pointed in the left lateral fornix. It was opened with scissors, and a pint of pus was evacuated; the cavity was irrigated and packed with iodoform gauze. The speaker thought that this treatment was quite as successful as laparotomy; in fact, laparotomy was too dangerous in many cases, as an attempt to tear out the abscess would lead to the formation of a fecal fistula.

Dr. JOHNSTON compared the pathology of pelvic inflammation to that of acute lobar pneumonia. In both instances the exudation might be absorbed or suppuration might result. In every specimen that he had examined the speaker had found disease of the epithelial structures—*i. e.*, of the ovary and tube—which accounted for the persistence of the abscess. He had frequently examined and seen Tait operate in cases which were pronounced to be chronic cellulitis, and pyosalpinx was the condition always found on opening the abdomen.

Dr. BALDY, of Philadelphia (a guest of the society), said that, excluding cases of hæmatocele that had undergone suppuration, all chronic pelvic abscesses originated in the tube or ovary. He favored laparotomy, as opposed to vaginal incision. He had often found an ovarian cyst complicating the abscess; hence there could be no permanent cure in such a case by simply tapping. He did not approve of making a counter-opening in the vagina after performing laparotomy. Martin had stated that in such cases pus continued to be discharged for months, and a mass remained permanently in the pelvis.

Dr. THADDEUS A. REAMY, of Cincinnati, thought that there

were other ways of treating abscesses besides opening the abdomen. He cited a case in which a tubal abscess discharged through the uterus, as well as through an artificial opening in the vagina; the patient recovered, and subsequently bore children. There was danger that the brilliant results obtained by abdominal surgery would lead us to attempt what was unjustifiable.

Dr. SUTTON, in closing, reiterated his statement that there were two channels by which septic matter might be transmitted from the uterus to the surrounding tissues—the tubes and the lymphatics. It was conceivable that a tube distended with pus might rupture at its lower border and discharge its contents between the layers of the broad ligaments, just as the blood escaped after rupture in extra-uterine pregnancy. A pelvic abscess would thus be formed, which might point in the vaginal roof in the usual manner. The chapter on pelvic abscess in text-books on gynecology should be rewritten.

Ovariectomy Performed Twice on the Same Patient.—

Sir THOMAS SPENCER WELLS, Bart., of London, read a short paper with this title in which he said that he had, during the last three months, twice removed ovarian tumors for the second time from the same patient. The first patient was a widow, forty years of age, upon whom ovariectomy had been performed ten years before. At the end of that period a second cyst was successfully removed. The second patient was a married woman, thirty-two years of age, sterile, from whom an ovarian cyst had been removed eight years before. The old cicatrix was excised. The patient made a good recovery.

The subject of secondary ovariectomy should be especially interesting to Americans, since Atlee had been the first to perform such an operation in 1861. The reader's first case had occurred in 1862. Reference was made to a recent paper by Martin, of Berlin. It was important to distinguish between cases of true secondary ovariectomy and laparotomies undertaken for intestinal obstruction, the cure of hernia, hysterectomy, or the completion of a former imperfect operation subsequent to the original operation. The author had had fourteen true cases, excluding his first ninety-nine operations. When one ovary was left during ovariectomy, there was only about one chance in fifty that it would form a cyst.

Dr. THOMAS regarded the paper as one of great practical value. In his own experience he could recall six of true secondary ovariectomy. In some cases he had met with great difficulty at the second operation, especially where peritonitis had followed the first. The removal of the tumor itself had not been especially difficult. He had never been able to find any trace of the first ligature. The lesson to be drawn was, that if there was any good excuse for removing the second ovary, it was better to do it. If the ovary was not perfectly healthy, or there was a strong desire on the part of the patient to avoid the risk of a subsequent operation, he had been accustomed to remove it. He had been surprised to hear the author express the opinion that there was only one chance in fifty of the remaining ovary becoming diseased, since, in his own experience, the liability was much greater.

Dr. GOODELL said that Dr. Thomas had expressed his views exactly. He could recall two cases in his own practice, one of which had terminated fatally. He would remove the other ovary if the patient was approaching or had passed the menopause. Patients had often requested him to remove both ovaries.

Dr. JAMES B. HUNTER, of New York, cited three cases in which he had performed ovariectomy for the second time in the same patient. The question of the removal of the second ovary was a very important one. He had often hesitated, especially in the case of women before the climacteric. In two instances in which the ovary seemed to be diseased he had given the women

the benefit of the doubt; they had subsequently borne children. Sufficient data had not yet been collected.

Dr. KELLY said that Sir Spencer Wells's own statistics proved the advisability of sparing the other ovary, since, of the women who recovered, only 13 required a subsequent operation, and 2 died, while 117 of the others bore 223 children after one ovary was removed.

Sir SPENCER WELLS said that the question raised by Dr. Thomas was a very important one. If the remaining ovary was somewhat enlarged and showed a few ovisacs on its exterior, many operators would be in favor of removing it. The speaker had sometimes done so, and sometimes he had not. He could recall several such cases in which young women had borne children. There was a slight additional risk in removing the second ovary. After the age of child-bearing there was less doubt as to the course to be pursued. There was also a moral question involved—*i. e.*, whether by removing a healthy ovary we ought to encourage women in the desire to avoid bearing children.

The New Cæsarean Section.—Dr. WILLIAM T. LUSK, of New York, read a paper with this title in which he said that several years before he had made a special study of Cæsarean section, and he believed that the operation would eventually be accepted as a practicable and useful one. To Säger we owed the present improvements in the technique of the operation; this surgeon has, in fact, given it its present prominence. Of course, his original details had been considerably modified. Porro's operation was now restricted to a small class of cases.

The following cases had occurred in the author's practice:

CASE I.—The patient had a Nägele pelvis, with extreme transverse contraction. Craniotomy involved too great a risk. The operation was performed in an hour and a quarter, and the patient's temperature only once rose to 102.8° F., falling to 100° after an evacuation of the bowels. A pelvic abscess subsequently developed, but she made a good recovery, and both mother and child were then well. According to Dr. Harris, this was the second successful operation in New York, the first having been performed in 1838.

CASE II.—In this instance there was advanced epithelioma of the cervix, involving the vagina, bladder, and rectum. The woman was in very bad condition, and craniotomy would have been fatal. The operation was undertaken in behalf of the child, and lasted a little over an hour. The child was saved and had been well ever since its birth. During the operation the patient became very blue, but this was attributed to the fact that, after the rubber ligature had been applied to the uterus, the house-physician administered a dose of ergot hypodermatically, which necessarily affected the general vascular system instead of the uterus. On the tenth day she had mania, which continued until her death on the sixty-second day. Death was due to the disease.

CASE III.—The patient, aged twenty-six, was very anæmic on her entrance into the hospital, labor having begun six days and a half before. Her pulse was 130, and her temperature 102° F. She had a rachitic pelvis, with an anterior conjugate of two inches and a half. There was no hope of saving her life by craniotomy, and, as the foetal heart could still be heard, it was decided to perform Cæsarean section. On removing the child the decidua was found to be in a sloughing condition. The pulse and temperature declined immediately after the operation. Then there was slight fever for a few days. On the fifth day the house physician, acting on his own authority, removed the abdominal stitches, so that the entire wound gaped. Fortunately, the patient escaped with a pelvic abscess. On the ninth day she developed double pneumonia and was very ill for several weeks, after which she had thrombo-phlebitis, but sub-

sequently recovered. The child died of trismus thirty-six hours after delivery.

A few days before, the author had performed craniotomy in a case similar to the last, the patient dying ten days after the operation, probably from sloughing of the decidua.

On general principles it could be affirmed that if the anterior conjugate was two inches and a half, craniotomy entailed as much risk as Cæsarean section, unless the transverse diameter was favorable. With a diameter of three inches and a half delivery could be effected by means of the forceps or the natural forces. If the diameter was three inches and a quarter, premature labor might be induced, or the spontaneous expulsion of a small child was possible. A skillful operator might perform version. With a pelvis varying between two inches and a third and three inches and a third there was still great difference of opinion as to the proper course to adopt. If after several hours the head remained above the brim, the choice lay between craniotomy and Cæsarean section, and the recent improvements in the latter operation led us to ask if it was not preferable to the former. In a letter received from Dr. Harris in 1865, he stated that in Germany the mortality after Cæsarean section was twenty-seven per cent. Since the use of antiseptics it had been reduced to eight or ten per cent. The total mortality in one hundred and thirty cases recorded up to date was twenty-seven per cent. From these Wyder would exclude cases in which the unskillful use of instruments or septic infection had already destroyed the chances of recovery. Craniotomy in skillful hands was not so dangerous as Cæsarean section as the same writer had shown. The facts should be clearly stated to the patient and her friends.

In cases of cancer or other morbid growths in the pelvis it was impossible to formulate rules; the operator must assume the responsibility. In America fourteen out of twenty-three patients had recovered, or forty per cent. Many of the operations had been performed under unfavorable conditions. It was very important to have favorable surroundings and skilled assistants, and to observe strict antiseptic precautions. Every physician should be familiar with the subject of pelvimetry, as he could then detect deformities at an early stage, and thus secure to the patient the advantage of an early operation. Before beginning the operation the foetal heart should be auscultated.

The author described briefly the details of the operation, and said in conclusion that if the patient's condition at the outset was fair, and the operation was performed in a hospital, the prognosis was good; but if she was operated upon in her own home, and did not receive proper nursing subsequently, her recovery must be regarded as little short of a miracle.

Dr. KELLY reported the following cases occurring in his own practice:

CASE I.—On May 17, 1888, he was called to see a woman who had been two weeks in labor, the membranes having ruptured on the tenth day. Her hygienic surroundings were bad. She was about four feet six inches in height, and had a justo-minor pelvis with an anterior conjugate of two inches and a half or two inches and a quarter. On making a vaginal examination, it was found that the pelvic tissues were so infiltrated that the head could not be felt. The operation was completed in thirty-five minutes, owing to the dangerous condition of the patient. Some difficulty was encountered in removing the child, as its head was partly engaged. It died of icterus at the end of a week. The mother had a tedious convalescence; at the end of the first week symptoms of suppuration developed, and on examination the lower uterine segment was found to be dilated by decomposed blood-clots. Subsequently pus was discharged through the uterine wound, and the patient now menstruated through a fistulous opening in the abdominal wall. She was quite well.

CASE II.—The patient had previously borne two children, one being dead, the other living, but small and feeble. Cæsarean section was performed, instead of craniotomy, at the request of the patient herself, who desired that the child should be saved. The mother had phlebitis on the fourteenth day, but made a good recovery, and was well, as was also the child.

Dr. H. J. GARRIGUES, of New York, said that he had performed the operation twice, the first time unsuccessfully, in 1882, upon a patient with a kyphotic pelvis, who was nearly dead from ante-partum hæmorrhage at the time of the operation. The second operation had been performed a few months before under favorable circumstances and had been entirely successful, both the mother and child being now alive and well. He agreed with the author that one could hardly hope to be fortunate in the case of private patients. He did not agree with him in regard to Säger's claims, since the method ascribed to him had been employed before he had written on the subject. When the speaker performed his first operation he did not know that such a man as Säger existed. He would not be understood as seeking to depreciate the value of the present operation, but he simply wished to call attention to the fact that the only suggestion original with Säger was to remove a strip of muscular tissue from the edge of the uterine wound. Even this procedure was unnecessary. Two American operators (Duncan and Baker) had employed the same form of suture which was now used, before Säger described it.

Dr. ENGELMANN said that the reason why the statistics of craniotomy were relatively so bad in foreign hospitals was because the patients were often brought in after they had been for many hours in the hands of midwives, whereas, in the cases of Cæsarean section, the patients were under observation for some time before the operation and were in better condition.

Dr. POLK said that he had had two fatal cases of Cæsarean section within the past four months. The first patient was moribund at the time of operation, the pelvis being filled with a cancerous mass. Her pulse was 160. She died at the end of twenty-four hours, but the child lived. In the second case the patient, who had a kyphotic pelvis, had been under observation for three or four weeks. The operation was performed six hours after labor began. Forty-eight hours after, she died of septic peritonitis.

(To be continued.)

New Inventions, etc.

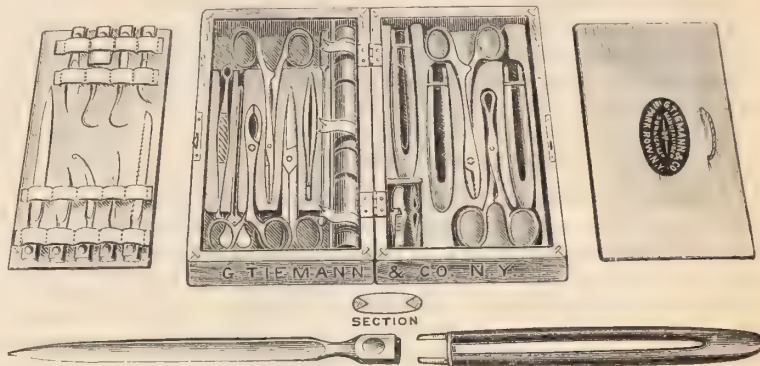
A COMPACT OPERATING CASE AND IMPROVED INSTRUMENT HANDLE.

By F. C. HUSSON, M. D.

I WISH to call attention to a new instrument handle which was lately manufactured in Paris by Lüer, and which has been modified and improved by Messrs. Tiemann and myself. The handle is made of hard rubber, and tapers gradually so that the end may be used in separating the tissues. The handle is easily cleansed, all parts being readily accessible, which is not the case with any separable handle with which I am acquainted. There is no "patent" catch to get out of order, and a little firm pressure in the center permits of the introduction or removal of the instrument.

Into this handle a great variety of instruments, such as amputating

knives, saws, etc., may be made to fit. I have had Messrs. Tiemann & Co. prepare an operating case fitted with such instruments, and it is perhaps the most complete and compact little case yet made. It is so small that it can easily be slipped into the coat-pocket, the dimensions being $7\frac{1}{2} \times 4 \times 1\frac{1}{2}$ inches, and it contains one amputation blade, six inches long; two scalpels, one tenotomy, one probe-pointed curved bis-



toury, one sharp-pointed curved bistoury, one saw, one tenaculum, one aneurysm needle, three hard-rubber handles to fit the above-named instruments, besides which there are a double sharp curette, two Péan artery forceps, one bull-dog artery clamp, two steel serres-fines, one Abbe needle-holder, one pair of scissors, one volsella, with French lock, so that the instrument may be taken apart and used as a pair of sharp retractors; one thumb forceps, a grooved director, probes, half a dozen assorted needles, and three hard-rubber cases for silk and needles. All the instruments can be taken apart and thoroughly cleaned.

The woodcut so clearly shows the new handle and the case that further description is unnecessary.

Miscellany.

An Army Medical Board will be in session in New York city, from May 1 to May 31, 1889, for the examination of candidates for appointment in the medical corps of the United States army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application for the necessary invitation to the Secretary of War, before April 1, 1889, stating the place of birth and the place and State of permanent residence, and inclosing certificates based on personal knowledge, from at least two persons of repute, as to American citizenship, character, and moral habits. Testimonials as to professional standing, from professors of the medical college from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a *regular medical college*, evidence of which, his diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

The New York Academy of Medicine.—At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 26th inst., Dr. G. B. Fowler will read a paper on "Diabetes Mellitus," and Dr. S. Baruch will read a paper on "Enuresis."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 27th inst., Dr. A. H. Goelet will show a perineal retractor for the dorsal posture, with an elevator for the anterior vaginal wall, Dr. J. P. Tuttle will report a case of extra-uterine pregnancy in which the foetus was expelled intact by the rectum, Dr. R. A. Murray will show specimens from a case of hæmatoma of both ovaries, and Dr. H. C. Coe will read a paper entitled "Immediate Application of Forceps to the after-coming Head in Cases of Version."

Supplemental Respiration.—Dr. William Ward, of Washington, asks us to state that his article on this subject, as published in the "Transactions of the Ninth International Medical Congress," was read by title, and is in an unfinished state; also that he intends to complete it and to furnish every member of the Congress with the amended version. Dr. Ward requests other medical journals to copy this notice.

The Health of Michigan.—According to the State Board of Health's circular for the four weeks ending December 1st, diphtheria was reported during that period from twenty-six places, scarlet fever from forty-one, typhoid fever from twenty-three, measles from six, and small-pox from seven.

THERAPEUTICAL NOTES.

Codeine in Abdominal Pain.—Dr. T. Lauder Brunton ("Brit. Med. Jour.," June 9, 1888) considers it not improbable that this alkaloid, which has almost fallen into disuse as an anodyne, will again come into vogue. He finds that its use can be pushed further than that of morphine without causing drowsiness or impairing the digestion. He was led to employ it especially in cases of abdominal pain by reflecting upon certain old experiments in which it wholly prevented the pain of arsenical poisoning in dogs. In cases of long-continued enteralgia, he begins with a dose of half a grain in the form of a pill, increasing to a grain, and repeats the administration as often as may be necessary. In cases of the intense localized pain due to an overloaded cæcum, with the suspicion of inflammation, the grain dose gives prompt relief, and is to be repeated whenever the pain returns in any considerable severity.

Iodine Applications in the Treatment of Ascites.—Dr. Rivadeneyra ("Corresp. méd.," 1887, No. 241; "Dtsch. Med.-Ztg.," Aug. 20, 1888) reports good results in the treatment of ascites, not dependent on grave visceral disease, from applications of tincture of iodine to the abdomen. He applies it in stripes about an inch wide and an inch apart, and repeats the application as soon as exfoliation begins. He gives the notes of two cases of ascites thus treated, both of which were associated with malarial disease. In one of them the ascites was cured in fifteen days, and in the other in twenty days.

Aluminium Acetate as a Resolvent.—The antiseptic property of this salt is well known. According to Dr. Grosch ("Berlin. klin. Woch.," April 30, 1888; "Gaz. hebdomadaire de médecine et de chirurgie," Sept. 21, 1888), it appears to have resolvent properties also. He has used a twenty-per-cent. solution in the abortive treatment of furuncles of the external auditory meatus. The meatus is irrigated with the solution every hour, and a wad of cotton wet with the same is inserted. Grosch says that the pain begins to diminish in four hours, and wholly disappears in eight hours. This effect he attributes to a diminution of the engorgement of the tissues, whereby pressure upon the terminal nerve filaments is reduced.

The Administration of Creasote.—The "Deutsche Medicinal-Zeitung" recommends the following formula:

Creasote.....	1 part;
Tincture of gentian.....	5 parts;
Alcohol.....	15 "
Tokay wine.....	60 "

A tablespoonful to be taken twice a day, in a glass of milk.

An Ointment for Seborrhœa Sicca of the Scalp.—Vidal ("Progr. méd.," "Memorabil.," xxxii, 8) recommends the following formula:

Precipitated sulphur.....	15 parts;
Castor-oil.....	50 "
Cacao butter.....	12 "
Balsam of Peru.....	2 "

The sulphur and the castor-oil are to be mixed thoroughly, then the cacao butter is to be added with the aid of a gentle heat, and finally the balsam. The ointment is to be rubbed into the hairy scalp every morning and evening.

An Ointment for Burns.—The "Union médicale" credits Gomez de la Mata with the following formula:

Iodoform.....	80 parts;
Extract of conium.....	40 "
Carbolic acid.....	1 part;
Rose-ointment.....	600 parts.

ANSWERS TO CORRESPONDENTS.

No. 244.—We think that a thoroughly competent male nurse, such as you describe, could obtain reasonably constant employment in New York. The usual compensation is from \$25 to \$30 a week, according to the nature of the case.

No. 245.—At the Presidio, San Francisco.

No. 246.—Ehrlich's staining solution (which, we presume, is what you mean) is prepared as follows: Cover the bottom of a flask with finely powdered gentian-violet to the depth of about two finger-breadths; then fill the flask with a saturated solution of aniline (made by stirring 4 parts of aniline in 100 of distilled water, and separating the excess of aniline by filtration). The mixture in the flask is to be shaken briskly at intervals, and in twenty-four hours the staining solution is ready. The section to be examined, having previously been immersed in absolute alcohol, is placed in this solution for a few minutes, when it becomes very deeply stained. It is then transferred to a solution of 1 part of iodine and 2 parts of potassium iodide in 100 parts of distilled water, in which it is left for from a minute to three minutes. It is then placed in absolute alcohol, where it becomes almost colorless, while the alcohol is colored purple-red. Finally it is cleared in oil of cloves and mounted in xylol, balsam, or glycerin.

To Contributors and Correspondents.—The attention of all who purpose favoring us with communications is respectfully called to the following:

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

Original Communications.

ENUCLEATION OF THE EYEBALL DURING PURULENT PANOPHTHALMITIS.

*Twelve Consecutive Enucleations of the Eyeball during Purulent Panophthalmitis, in all of which the Course of Healing was uninterrupted by Unfavorable Symptoms.**

By JOSEPH A. ANDREWS, M. D.,

OPHTHALMIC SURGEON TO CHARITY HOSPITAL, NEW YORK, ETC.

THE text-books on ophthalmology, reflecting the warning of Albrecht von Graefe, pronounce against enucleation of an eyeball which is the seat of acute purulent panophthalmitis, von Graefe's declaration against the operation having been based upon his experience in two instances in which meningitis and death had followed his excision of the globe. Since von Graefe's time, enucleation of the eyeball has been followed by death from purulent meningitis in a few instances only, recorded in ophthalmic literature. In these cases the enucleated globe was either in a state of purulent panophthalmitis, or the seat of non-purulent inflammation, or the excision was undertaken for the removal of an orbital or intra-orbital growth.

Therefore, that enucleation of the eyeball may lead to meningitis and death is a fact which can not be disregarded.

In the majority of the cases on record the conclusion seems justified that the meningitis was due to infection of the orbital wound after enucleation, the infection having spread through different predetermined paths to the cranial cavity. On the other hand, some of the cases leave the reader in doubt as to whether the meningitis was or was not already excited before the enucleation was undertaken, and the data so far do not satisfactorily answer this question one way or another, although the pretty uniform first appearance of symptoms pointing to intracranial disease in twenty-four or forty-eight hours after excision does make the idea of coincidence somewhat doubtful.

I have enucleated twelve globes during purulent panophthalmitis. In three of the cases the suppuration was just beginning; in two cases purulent panophthalmitis had followed a violent blow on the eye, the eyeball in each case having been laid open; the attendant swelling of the eyelids and ocular conjunctiva was very great, and rendered the operation of enucleation embarrassing and difficult; nevertheless, in these two cases, the course of healing was smooth and the patient's sufferings were unquestionably shortened by the operation. In the rest of the cases the suppuration was active, and the swelling of the ocular conjunctiva more or less pronounced, but the healing of the orbital wound was smooth in all of these cases.

In every instance, immediately after the enucleation, the orbit was thoroughly washed out by the aid of a gentle stream from a fountain syringe, with a solution of biniodide of mercury (1 to 20,000); in no case was the compress bandage applied, only a few layers of carbolized gauze having

been laid over the empty orbit. The frequency of the washing of the orbit was regulated by the condition of the orbital wound. In the two cases in which there was great swelling of the lids, ocular conjunctiva, and tissues of the orbit, the washing was repeated a number of times during the day by a trained nurse; for I consider it to be essential that this very important part of the after-treatment should be attended to by a cleanly and competent person, since the majority of the cases of this disease occur in a class of persons to a member of whose family it would be unsafe to leave the washing of the orbital wound, in their invariably unclean homes.

The following tables show that the occurrence of meningitis after enucleation is not confined to cases of suppuration of the globe, it having been observed after excision of a globe which was the seat of a non-purulent inflammation; but death, when it did occur in such cases, was due to purulent meningitis, from which we must conclude that the orbital wound was infected at or shortly after the operation. Nevertheless, I can not escape the conviction that it is less dangerous to enucleate a suppurating globe than not to do so.

I have been able to collect only thirty-six cases of death following enucleation. Meningitis and death also followed purulent panophthalmitis when enucleation was not performed; and the same disastrous issue has attended a simple needling of a secondary cataract. But observe that purulent meningitis has resulted in these cases; in both cases the infection was carried from the globe to the brain independently of enucleation; but suppuration of the globe was present in each instance, as in the case of secondary cataract there was suppuration of the corneal wound. Now, no ophthalmic surgeon would hesitate to enucleate an eyeball containing a foreign body which can not otherwise be removed, and yet just such cases have resulted in purulent meningitis and death in consequence of infection of the orbital wound; but no surgeon has declared against enucleation under such conditions, although infection of the orbital wound was the cause of the meningitis in nearly all the cases of death after enucleation for purulent panophthalmitis. It is very evident that thirty-five, or even a hundred, cases would be a very small proportion of the enormous number of enucleations performed since 1863, unless we suppose there has been a fatal issue in many cases not reported. I have endeavored to ascertain the relative frequency of meningitis and death in purulent panophthalmitis with and without enucleation, but I have been unable to obtain figures which would be of much service to us.

In a thousand enucleations by Arlt or his assistants there had not been a single fatal result. D'Oench,* in his report on five hundred successive enucleations of the eyeball, states that the eye was removed in twenty-one cases during panophthalmitis. In some of the cases the inflammation

* Read before the Section in Ophthalmology of the New York Academy of Medicine, November 19, 1888.

* "Archives of Ophthalmology," vol. xvi, 1887. Dr. D'Oench reported that, since the reading of his paper, seventy-eight enucleations had been done at the Ophthalmic and Aural Institute, New York. In eleven cases there had been incipient panophthalmitis, in all of which recovery had taken place without the slightest accident.

STATISTICS OF CASES OF DEATH AFTER ENUCLEATION OF THE EYEBALL.

No.	Author.	Age.	Disease.	Condition of the eye at time of enucleation.	When meningitic symptoms occur'd.	Cause of death.	Remarks.
1	A. v. Graefe, "Klin. Monatsbl. f. Augenheilk," 1863.	....	Purulent panophthalmitis.	Purulent panophthalmitis; exophthalmus.			
2	Horner, <i>ibid.</i> , 1863, p. 456.	....	Glioma retinae, entirely intra-bulbar.	Eye free from inflammation.	3 days after enucleation.	Purulent meningitis.	No inflammation of opticus found at autopsy.
3	A. v. Graefe, "Arch. f. Oph.," xii, 2, p. 100, 1866.	6 yrs.	Orbital gliosarcoma (n. opt.)	Exophthalmus; neuro-retinitis; swelling of optic disc.	10 days after enucleation.	Pur. meningitis; gliosarcoma at base of brain (unconnected with orbital growth) suppurating and connected with suppuration in orbit.	Condition favorable for first four days after enucleation; slight febrile action, referable to swelling and purulent infiltration of the fat of the orbit; collapse on fifth day.
4	Just, "Klin. Monatsblätter f. Augenheilk.," 1872, p. 273 or 253.	....	Phthisis bulbi.	Eye painful; conjunctiva bulbi dark-red & swollen; sympathetic irido-cyclitis of fellow-eye; pus in vitreous of enucleated eye.	8 days after enucleation.	Death in sopor; no autopsy, but unquestionable clinical evidence of meningitis.	
5	H. Pagenstecher, "Klin. Monatsbl. f. Augenheilk.," 1873, p. 123.	....	Left eyeball atrophic; greenish-yellow mass in region of wound; chemosis of conjunctiva bulbi; irido-chorioiditis.	.....	24 hours after enucleation of left eyeball.	Purulent meningitis of convexity and base of brain.	Stabbed in left eye six weeks before enucleation; for 14 days before headache, severe headache; pronounced irido-cyclitis. At autopsy the right eye was found infiltrated; no connection could be found between the intracranial disease and the wound-surface caused by the enucleation.
6	Verneuil, "Gazette hebdomadaire," 1874, p. 21.	....	"Encephaloid" of retina; orbital phlegmon.	.....		Diffuse meningitis.	Death occurred on fifth day after enucleation.
7	Asplund, "Hygieia," 1880, p. 560; Stef. Nagel's "Jahresb. f. 1884," s. 480.	....	Detachment of retina; no changes in chorioid.	.....	On day following enucleation.	Purulent meningitis.	Foreign body in eye; eye wounded forty-eight hours before enucleation by chip of iron; optic nerve without changes at autopsy.
8	Alfred Graefe, "Naturforscherversammlung zu Magdeburg," 1884.	....	Purulent panophthalmitis.	Purulent panophthalmitis.	On day following enucleation.	Purulent meningitis; no thrombosis.	Eye was enucleated under antiseptic precautions, on same day in which purulent panophthalmitis, following cataract extraction, showed itself.
9	Alfr. Graefe, <i>ibid.</i>*	....	.....	.....	.....	.....	.....
10	Teale, "Brain," vol. ii, p. 423, 1880.	45 yrs.	.....	.....	48 hours.	Purulent meningitis.	Lens needled for partial cataract, May 24th; on following day corneal puncture opaque; during night of second day, vomiting and pain; cornea sloughed and lens escaped; no changes in optic nerve at autopsy.
11	Alex. Dyce Davidson, "Trans. Ophthalm. Soc. United Kingdom," June 8, 1886, p. 486 (reported by Stephen Mackenzie).	49 yrs.	Phthisis bulbi (painful).	.....	On morning of 3d day after enucleation.	Meningitis.	Eye was enucleated under antiseptic precautions; injury of eye four years previous to enucleation; history of case not wholly satisfactory.
12	Warren Tay and J. B. Lawford, <i>ibid.</i> , 1886, p. 482.	9 yrs.	Purulent panophthalmitis.	Purulent panophthalmitis.	On day following enucleation.	Meningitis.	Penetrating wound of eyeball (recent); optic nerve was found to be normal on microscopic examination; the result of microscopic examination was entirely negative, therefore no clue to the channel by which the infection passed from the eyeball or operation-wound to the basal meninges.
13	E. Nettleship, "Trans. Ophthalm. Soc. U. K.," 1886, p. 446.	19 yrs.	Purulent panophthalmitis.	.....	On second day (?) after enucleation.	Meningitis symmetrical.	Gave history of blow on eye, which dislocated lens into anterior chamber; removal of lens followed by purulent panophthalmitis; meningeal appearances seemed to be due to a mixture of old thickening with new inflammation; the intracranial part of each optic nerve showed moderate inflammation of its covering.
14	Schreiber. See Graefe in "Naturforscherversammlung zu Magdeburg," 1884.	....	Traumatic purulent irido-cyclitis.	Purulent panophthalmitis.	Not given.	Meningitis.	

* In this, as in the foregoing case, purulent inflammation had followed extraction of a cataract, and, in order to save the patient the pain of purulent panophthalmitis, enucleation was performed. Death on the sixth day after enucleation, with symptoms of meningitis. Purulent meningitis was present in each case; in the one case the purulent process had extended through the pial sheath of optic nerve to base of brain. Contents of orbit in each case normal.

STATISTICS OF CASES OF DEATH AFTER ENUCLEATION OF THE EYEBALL.—Continued.

No.	Author.	Age.	Disease.	Condition of the eye at time of enucleation.	When meningeal symptoms occur'd.	Cause of death.	Remarks.
15	Howe, "Naturforscherversamm. zu Magdeburg," 1884.	...	Phthisis bulbi dolorosa.	.....	Not given.	Meningitis.	
16	De Wecker, "Annales d'oculistique," vol. xcv, p. 56, 1886.	...	Painful total staphyloma of cornea.	No note as to presence of pus in globe.	24 hours after enucleation.	No autopsy.	Death occurred five days after enucleation.
17	Hill-Griffith, "Br. Med. Jr.," 1884, vol. ii, p. 1273. Case under care of Dr. Glascott.	71 yrs.	Rodent ulcer of lids of right eye; globe atrophied.	.....	?	Purulent meningitis; base of brain perfectly free from exudation.	Did not rally from effects of operation, and died six days later.
18	Hill-Griffith, <i>ibid.</i> Case under care of Dr. Mules.	48 yrs.	R. E., pur. panophthalmitis.	.....	Not given.	Purulent meningitis.	In bad health for some time; no connection found between pus on surface of brain and either the orbit or temporal bone.
19	J. B. Story. Case of Arthur Ransome, <i>ibid.</i>	...	Purulent panophthalmitis.	.....	Not given.	Purulent meningitis.	
20	Brailly, <i>ibid.</i> *	...					
21	Priestley Smith, "Ophthal. Rev.," 1885.	...	Large ulcerat'd sarcoma b'ginning in, but not protruding from globe.	.....	.....	Purulent meningitis.	No details; swelling of orbital tissues, eyelids, and cheek a few hours after enucleation; purulent inflammation of orbital tissues; death forty-eight hours after operation. Erysipelas.
22	Priestley Smith, "Ophthal. Review," 1885, p. 39.	...	Large ulcerat'd sarcoma originating in and protruding from globe.	No details.	.....	Purulent meningitis.	Patient was an old man.
23	Priestley Smith, <i>ibid.</i>	...	Eye hard, inflamed, and painful, but not obviously suppurating.	No details.	.....	The post-mortem record was orbital cellulitis and meningitis.	Swelling of orbital tissues, eyelids, and cheeks set in within a few hours after the operation, coma followed, and patient died within forty-eight hours.
24	De Wecker, "Annal. d'oculistique," T. 95, p. 57, 1886.	...	Eye soft, tender, and painful; sympathetic irritat'n of fellow-eye.	.....	.....	No autopsy.	
25	H. Ström, "Norsk. Mag. f. Lægemed.," vol. xv, 4, p. 242, 1885. See Nettleship's paper, "Tr. Ophth. Soc. U. K.," 1886, p. 472.	...	Inflammatory absolute glaucoma.	.....	Fourth day after enucleation.	Purulent meningitis.	Patient had chills with headache on fourth day after enucleation, and died nine days later, with symptoms of meningitis. A case of erysipelas was discovered in the same ward.
26	Katzenstein, Deutschmann's paper, v. Graefe's "Arch.," v. xxxi, 4, 1885, p. 259.	1 yr.	Purulent irido-cyclitis.	Purulent irido-cyclitis.	About forty-eight hours after enucleation; commencing with vomiting and somnolence. Temperature 39.4° C.	Purulent meningitis; purulent infiltration of pia mater, most pronounced at chiasma, and greater amount of infiltration in left than in right Sylvian fossa. Infiltration of temporal and frontal lobes, and convexity of cerebrum; a few small foci of purulent infiltration on cerebellum; yellowish-gray thrombi in longitudinal sinus; contents and walls of veins of pia mater normal. Sinus of base of brain contains no thrombi; in sinus cavernosus alone are found, on either side of sella, puriform thrombi, which are connected with an extra-meningeal suppuration; this extra-meningeal suppuration is chiefly seen in sheath of fifth nerve on both sides.	Stabbed in right eye ten days before enucleation; eye excised in state of purulent irido-cyclitis; eyeball burst at operation, and purulent contents ran out into orbital wound; orbit freely syringed with two-per-cent. solution of carbolic acid. Death occurred on seventh day after enucleation. Fellow-eye showed venous pulsation. One of the larger vessels in fundus was fringed with white streak; fat of orbital veins, optic nerve, and operation-wound normal; a single streak of pus passing along sixth nerve of excised eye, far into orbit.
27	A. H. Benson, "Ophthalmic Review," 1885, p. 293.	17 yrs.	Phthisis bulbi with purulent cavity.	Phthisis bulbi dolorosa.	On day following operation.	Purulent meningitis.	Operation under antiseptic precautions; died on eighth day after enucleation. Nerves showing perineurium and interfibrillar prolongations of connective tissue greatly hypertrophied. Sheath of nerve is very much thickened; subvaginal and supravaginal sheaths contain pus; all this applies particularly to sections taken within orbit, some of them being from a point quite near to the eye, and others close to the foramen.

* Similar to foregoing case; details not given.

STATISTICS OF CASES OF DEATH AFTER ENUCLEATION OF THE EYEBALL.—*Concluded.*

No.	Author.	Age.	Disease.	Condition of the eye at time of enucleation.	When meningitic symptoms occur'd.	Cause of death.	Remarks.
28	Hoffmann; Deutschmann's paper, in v. Graefe's "Arch.," vol. xxxi, iv, p. 259.	....	No	details given.		Meningitis.	
29	Wordsworth, quoted by Nettleship in "Trans. Oph. Soc. U. K.," vol. vi, 1886, p. 467.	41 yrs.	Purulent infection of cornea; adherent leucoma.	Saemisch's operation was done about two months ago.	24 hours (?) after enucleation.	Purulent meningitis at base, passing from chiasma back to groove between cerebrum and cerebellum, and along each Sylvian fissure to upper surface of cerebrum.	Both optic nerves looked normal; their surroundings also looked quite normal, and there was no pus around them.
30	Mannhardt, Heidelberg Congress, '63.	....	No	note.	.....	No post-mortem.	
31	Lang, "Ophthalmic Review," 1887, p. 179.	....	Panophthalmitis.	.....	.....	Purulent meningitis.	No details given.
32	Osio, Sajous's "Annual of the Med. Sciences," vol. iii, 1888, p. 83.	....	.....	Panophthalmitis.	.....	Meningitis.	
33	Lang, "Br. Med. Jour.," vol. i, 1887, p. 1043.	....	.....	Purulent panophthalmitis.	.....	Purulent meningitis.	Death 48 hours after enucleation.
34	Panas, "La semaine médicale," 9 Mai, 1888.	67 yrs.	Purulent panophthalmitis.	.....	Not given.	Purulent meningitis.	Patient showed, after enucleation, pleuritic symptoms and general infection. For details of this case, see an article by Panas, "Arch. d'ophthal.," July-Aug., 1888, p. 317.
35	Galezowski, <i>ibid.</i>	.....	.....	.....	Details not given.		Death had resulted after enucleation (no panophthalmitis), in which there was an accidental infection.
36	O. D. Pomeroy, at the meeting at which this paper was read.	....	Purulent panophthalmitis.	Purulent panophthalmitis.	.....	No autopsy allowed.	Patient was an old man; panophthalmitis had resulted from injury to the globe; the patient died comatose on the day after the enucleation.

Cases in which recovery from meningitis has taken place after enucleation have been published by Snell, Leber, Priestley Smith, Meyhöfer and Vossius.

was just beginning; in two thirds of the whole number there was active suppuration attended with more or less swelling. In all the cases but three the panophthalmitis was of traumatic origin; in two no cause was mentioned, and in one the inflammation was supposed to have been of spontaneous origin. In two cases the eyeball was removed on account of suppuration which had set in after extraction of cataract. In all of these cases except one the course of healing was smooth. In this one case there was great chemosis before the operation, and the cornea had been converted into a yellowish mass. The globe was inclosed in hard lardaceous tissue, making its removal very difficult. When the sclera was incised, thin pus escaped; the globe collapsed and had to be pulled forward with a hook. After the operation the patient had some fever, and an abscess of the upper lid developed. The swelling then slowly disappeared and the result was good. In two other cases the globe was incised, permitting pus to escape, and was removed after the inflammation had somewhat subsided. In still another case the chemosis was so great that no squint-hook could be used. The great majority were discharged after five days, and of those who remained longer the stay was lengthened in some because an attempt was first made to save the eye before enucleation was resorted to.

A discussion on this subject published in the "Transactions of the Ophthalmological Society of the United Kingdom," 1887, reflects the views of some ophthalmic surgeons of extensive experience. The discussion was on Mr. Nettleship's paper.

Dr. Brudenell Carter said he had never met with a case of meningitis consecutive to enucleation of the eyeball, but he had always avoided enucleation during panophthalmitis. His practice in purulent panophthalmitis had been to make free incisions through the sclerotic for the purpose of relieving pain, and to defer anything more than this until the acute inflammation had subsided.

Mr. M. McHardy said he never left a panophthalmitis to run its course unassisted; he almost invariably *enucleated immediately the advent of panophthalmitis was established*. Mr. McHardy related (in this discussion) a case of death following simple incision in a case of acute panophthalmitis. Here may be added, although not a part of this discussion, Webster's case in which meningitis and death had resulted from panophthalmitis consecutive to extraction of cataract, but in which enucleation was not performed.

Mr. Higgins and Dr. Mules were opposed to enucleation in panophthalmitis.

Mr. Gunn expressed his surprise that so many members of the society believed in the danger of enucleation during panophthalmitis. Out of more than a thousand cases of excision of the eyeball that had been performed at Moorfields, in many of which the globe was suppurating, the case now brought forward by Mr. Nettleship was the first traceable to enucleation.

Still another discussion held in the *Société française d'ophtalmologie* ("La semaine médicale," 9 Mai, 1888) interests us in this connection.

Panas said that he had enucleated an eye in panophthal-

mitis; the patient then showed pleuritic phenomena and general infection, and died with symptoms of meningitis. The autopsy showed, aside from interstitial nephritis, the presence of an extensive purulent meningitis, sero-purulent pleuritis, and multiple abscesses of lungs. All of these foci of disease contained the same micro-organisms as the panophthalmitic eye.

This observation proves that a general infection may spread from the eye. Panas, therefore, concluded that we should remove the source of infection as soon as possible.

Dufur had seen good and bad results.

Abadie said: "In panophthalmitis the process is confined to the eyeball. It is by enucleation that the infective material is propagated to the orbital tissue." Abadie favored evisceration instead of enucleation, but said the resulting pain to the patient was very active.

Motais had had two cases of meningitis during panophthalmitis in which no operation had been performed. He favored enucleation.

Gayet agreed with Motais. In sixty to eighty enucleations of panophthalmitic eyes there was only one lethal termination, which, however, occurred in a patient who was infected at the time of the operation.

Meyer was opposed to enucleation in panophthalmitis.

Galezowski had collected cases of death after enucleation in panophthalmitis in the same period in which he had observed only one death after enucleation without panophthalmitis in which there was an accidental infection.

At the meeting of the Section in Ophthalmology of the New York Academy of Medicine, held in May, 1887, in answer to a question addressed to the meeting by myself, Dr. H. Knapp and the late Dr. C. R. Agnew said they were opposed to enucleation in panophthalmitis.

We see, therefore, that experienced surgeons differ on the question of enucleating an eyeball during panophthalmitis.

Now, the number of cases in which enucleation has been followed by meningitis and death is, in proportion to the enormous number of enucleations performed during a period of twenty-five years, extremely small; and as the results show that in a very large number of instances where the eye has been enucleated during panophthalmitis there was practically no reaction, we are certainly justified in believing that the danger of the operation has been overestimated. No matter from which side you view the question, the accidents have been entirely too few in number to establish the rule that an eyeball should not be removed during panophthalmitis.

Some surgeons who are opposed to enucleation in panophthalmitis favor evisceration. Evisceration, as proposed by Alfred Graefe in 1884, has had a varied experience among ophthalmic surgeons. Alfred Graefe proposed evisceration chiefly with the view of diminishing or abolishing the risk of meningitis. His mode of procedure was as follows: The cornea, together with a ring of the sclera from 1 to 2 mm. wide, is removed; the remainder of the globe is then completely emptied of its contents by means of a broad bent scoop, so that only the cup formed by the sclera remains; this is then washed out with an ice-cold solution

of corrosive sublimate, and the conjunctiva is drawn together over it with gut sutures. Graefe also maintains that enucleation, undertaken in the presence of panophthalmitis, is apt to be more tedious than after evisceration. Experience is diametrically opposed to this claim. Graefe further contended that, since none of the channels of communication between the eye and the brain are opened in evisceration, the risk of meningitis and sympathetic ophthalmia is much lessened or entirely removed. This contention presupposes knowledge of the channels by which the infection extends from the eye to the meninges. Now, we are by no means positively informed as to these channels. My statistics show that fatal meningitis has been set up by intra-ocular supuration following a simple needling of a secondary cataract. These statistics further show that, out of thirteen autopsies upon cases of meningitis after enucleation—in which especial attention was directed to the ascertainment by microscopic examination of the channel by which the infection was conveyed to the cranial cavity—in seven the most careful search failed to discover any evidence of inflammation of the optic nerve, and in the majority of the cases the examination, as to answering this question, was negative. In almost every instance the meningitis was of a purulent character, and was as marked at the convexity as at the base of the brain.

Axel Key, Retzius, and Schwalbe have demonstrated the anatomical connection of the arachnoid space of the cranial cavity with the spaces in the sheath of the optic nerve. Although we have in this fact a possible clew to the channel by which infection may be conveyed to the brain, there is very little pathologico-anatomical material to support this connection, in the human being at least. In the animal, experiments have brought out some interesting facts in this connection. Thus Deutschmann showed that when tuberculous pus was introduced into the arachnoid space of rabbits it gave rise to tubercular meningitis, perineuritis, tubercle in the outer and inner sheath of the optic nerve up to the bulbous end, papillitis, and tuberculosis of the chorioid and vitreous. These experiments illustrated descending optic neuritis, and that an infectious inflammation in the cranial cavity may be carried along the optic nerve to the papilla, and even to the uveal tract of the eye. Deutschmann* further demonstrated the opposite course—*i. e.*, descending optic neuritis, in that injections of certain micro-organisms made into the vitreous chamber of rabbits produced chronic irido-cyclitis, purulent infiltration of the vitreous, and papillitis of the infected eye; then interstitial optic neuritis, perineuritis, and purulent infiltration of the pia mater at the base of the cerebrum; further, infiltration at the chiasm, descending neuritis, and perineuritis optica, extending into the papilla and uveal tract of the fellow-eye. It has been shown that the analogy between the conducting channels in the situation in question, in man and rabbits, is so great that these experiments have been applied to elucidate similar pathological conditions in man. Unfortunately, the reports of autopsies in cases of meningitis after enucleation have thus far shown that the optic nerve was the channel along

* V. Graefe's "Arch. f. Ophthal.," xxix, xxx, 3, 4; xxxi, 2.

which the infection was conveyed to the cranial cavity in exceptional instances only, as in the majority of such cases the autopsies have failed to disclose any path of extension whatsoever.

Gifford maintains that his experiments prove that the route taken by micrococci in passing from the eye to the brain is not, as Deutschmann has stated, in the sheaths of the optic nerves, but that, in leaving the infected eye, they pass out of the eye around the *central vessels* to the apex of the orbit, and thence to the cranial cavity, where they were found in the pia mater at the chiasm.

Now, as I have said before, the majority of autopsies failing to disclose any path by which the infection spread to the brain, we are justified in concluding that meningitis after enucleation is only exceptionally due to extension along the optic nerve, and that there must, therefore, be some other path, and it does seem that we should look to the veins for an explanation. The autopsies do not sustain this view; nevertheless, the veins are most likely the paths along which the infection is carried, for we know that absorption might occur through the veins without any change being discoverable in their walls—to wit: Leber's case of meningitis after enucleation, in which case the veins were unchanged in septic phlebitis of the cavernous sinus. In the face of this view I fail to see any advantage in substituting evisceration for enucleation, because septic absorption could take place from the interior of the sclerotic through the open mouths of the trunks formed by the union of the *venæ vorticosæ* as easily as by the vessels of Tenon's capsule which are imbedded in soft tissues; indeed, I can see only serious disadvantages in the performance of evisceration in panophthalmitis, in that we have the danger of open veins as in enucleation, with the added danger of pent-up pus, and without the decided advantage afforded, by enucleation of our being able to thoroughly wash the orbital cavity. Further, evisceration does not, as has been claimed, afford immunity to sympathetic ophthalmia.*

Therefore, as I believe that the veins are the chief channels along which infection is carried to the brain in panophthalmitis, where enucleation has been done, as well as in those cases in which meningitis has occurred, enucleation not having been resorted to, and as evisceration is not a barrier to this disaster, I am disposed to favor enucleation in panophthalmitis. I recognize that in so doing I am but following the general principle of surgery to remove the source of infection, represented in the case under consideration by the suppurating eyeball.

In conclusion, I wish to repeat that I fully appreciate the fact that enucleation of an eyeball involves serious mutilation, and that the operation is not wholly free from danger even when performed with care and under antiseptic precautions; but that I believe the element of danger is best modified, and the fatal issue even averted, by applying thorough antiseptic precautions after the operation. The great point to aim at, therefore, is to *prevent the further re-*

tention and absorption of septic matter; and I believe that this end is best attained by not applying the compress bandage to the lids, and by keeping the wound in the orbit purified by proper drainage and frequent antiseptic injections. With such precautions, panophthalmitis is, it seems to me, not a barrier to enucleation.

39 WEST THIRTY-SECOND STREET.

SURGICAL TREATMENT FOR LACERATIONS OF THE PERINÆUM AND PELVIC FLOOR.*

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I WILL not consume your time in vague theories to prove the relative value of the so-called perineal body in holding the uterus, etc., in position, or its action as the key-stone of an arch, but will confine myself especially to the surgical treatment for lacerations or injuries of the muscular and aponeurotic structures that form the floor or diaphragm of the pelvis. There is probably no other subject in gynæcology about which so much has been said that is of no real value, and hence a relatively simple operation has been made to appear so complicated that it is seldom correctly performed. We will pass by much of this immensity of pseudo-scientific rubbish, and take a practical view of the subject.

The fat in the areolar connective tissue of the perinæum constitutes a valuable part of this structure, just as it does in other parts of the body, but it gives but little strength, and with the muscles and fascia destroyed is of no use in holding the vagina, uterus, rectum, or bladder in their normal positions. But all the perinæum may be lacerated except the muscles and the fascia, and still we may have no displacement of the pelvic organs.

The muscles and the fascia in the perinæum give it strength, and when they are lacerated no operation that does not primarily tend to reunite them is logical, or will be followed by permanent good results. Prolapsus of the uterus, with rectocele and cystocele, may result from subcutaneous rupture of these structures with no laceration or injury of the mucous membrane or other parts of the perinæum. This condition is usually not diagnosticated by the attending physician, and the woman is subjected to various plans of treatment to hold the parts in position and relieve the annoyance from pressure, weight, etc., all of which give but little relief; nor can she be cured except by an operation to bring together and reunite the muscles and fascia. Nearly all the muscles that contribute to the formation of the pelvic floor are united to the bony parts of the pelvis—symphysis pubis, tuber ischii, and coccyx—and are joined together by muscular or ligamentary union between

* See report of two cases of sympathetic ophthalmia after evisceration, by Cross, in "Transactions of the Ophthalmological Society of the United Kingdom," vol. vii, 1887, p. 149.

* Read before the American Association of Obstetricians and Gynæcologists at its first annual meeting.

the vagina and the rectum to give strength and protection to the perinæum. The muscles are surrounded and protected by the three layers—superficial, middle, and deep—of the pelvic fascia, which are also joined together in the perineal raphe, and give additional protection to the perinæum, and hold the rectum, vagina, and urethra in position.

The following are about all the muscles that constitute the pelvic floor, namely: the levator ani, the ischio-coccygeus, the sphincter ani, the constrictor vaginae, the transversus perinaei, and the ischio-cavernosus; the levator ani and the ischio-coccygeus may be described together. The sphincter ani and the constrictor vaginae are the most important muscles in the perinæum, and in surrounding the rectum and vagina they unite and form a figure of eight.

When any or all of the perineal union of these muscles, or of the fascia, is lacerated, unless at once united and held together, the muscular contractions continue to widen the distance between the torn ends, so that the vulva gradually becomes enlarged laterally. The extent of this lateral separation is governed by the degree of laceration and the length of time since it occurred. If the foregoing is correct, then no operation will succeed that fails to bring these torn ends together so as to reunite them. This is a simple question that holds good in all operations to restore the perinæum in complete or incomplete ruptures, and if we are controlled by it, and are familiar with the technique of the operation, success will nearly always crown our efforts.

I do not know of any operation that is not faulty in this particular, but the operations that accomplish this purpose best are performed by Tait, Duncan, Simpson, Langenbeck, Saenger, Hart, and Barbour; but, if I understand their methods correctly, they do not fully appreciate the importance of dissecting up and uniting the muscles and fascia. Emmet, Marcy, and Jenks have done much to perfect the technique of the operation.

It would be a waste of time to mention the almost endless variety of operations that have been suggested or performed, most of which are of no real value to the patient, or, at best, give only temporary and imperfect relief. No permanent good results can follow secondary operations where the operator practices the usual form of denudation and removes only the superficial parts of the membrane covering the lacerated surfaces. He gets union of the surfaces of the mucous membrane only; the ends of the muscles and the torn fascia are still separated, and the perinæum gives no firm or sustaining support. The muscles and fascia can not be united in secondary operations unless we dissect up the torn ends by deep incisions, so as to bring them together and hold them in apposition. This is accomplished by a splitting process, something after the fashion of Tait, Langenbeck, Saenger, and others. The incisions should go deep near the anus on the lateral borders of the vulva, and the recto-vaginal septum should be split through the connective tissue between the vaginal and rectal layers, so that the vaginal flap may be thick enough to prevent sloughing.

In complete ruptures the incisions must expose the ends

of the sphincter ani muscle, and the lateral and the recto-vaginal splitting must be continued and widened until it exposes, if possible, the separated muscles and fascia, but the operator must be governed by the condition he finds and never make incisions more extensive than are necessary. In ruptures extending high up the recto-vaginal wall, and especially in ruptures of old standing, followed by atrophy of the tissues, where the ends of the muscles have become widely separated, the splitting will necessarily have to be made more extensive.

If the operation to restore the perinæum is not done within twelve hours after the injury, it is hardly possible to get union. It is not necessary to give the reasons why the primary operation should be performed, as there are now but few men of recognized ability in obstetrics or gynecology who are opposed to it. In this list the name of the distinguished Professor A. Charpentier, of Paris, is conspicuous. His objections are illogical and are not sustained in actual practice where the operation is correctly done. There are a few cases of profound shock, or where the tissues are so injured that the parts will surely slough, in which any operation is contra-indicated. But these instances are rare and the woman is nearly always benefited by the operation. I do not wish to be understood to urge the primary operation, nor the secondary operation, where there is only a short rent that does not involve the perineal muscles or fascia. These lacerations do about as well without treatment, and, if they do not entirely unite, cause but little immediate or remote inconvenience. But if deeper lacerations are not operated on immediately, various complications may arise, including septicæmia, uterine displacements, rectocele, cystocele, chronic inflammation of the bladder or rectum, subinvolution resulting in hyperplasia of the uterus, vagina, and other pelvic structures, weakening of the uterine ligaments, a tendency to abortion, impaired sexual desire or gratification to the husband, and neuralgia in the site of rupture, or reflex disturbances; and, if the sphincter ani is entirely torn through, incontinence of feces and gases. If the muscles and fascia are much injured, we can not expect the torn ends to perfectly unite unless held together by sutures. The union otherwise, if any, will be imperfect, and often of the integument and the superficial structures only. But if the operation is properly performed in partial or complete ruptures, union will be nearly perfect in most cases. Of course the operator must be familiar with the correct technique of the operation and must observe absolute asepsis. The same general principles should govern us in the use of sutures that apply to the secondary operation. I have operated in such cases often and have never had a failure; in fact, the success is usually more perfect than in the secondary operation. The torn ends of the muscles and fascia are now easily held in apposition and unite within a few days. I operated on a typical case a few weeks ago for my friend Dr. —.

The woman was delivered of a large child when sixteen years old, and was torn through into the rectum for over an inch, and the vaginal wall and the connective tissue were torn two inches further up. The operation was done about an hour and a half after delivery. About fifteen sutures were used in

the vagina and the perinæum. The vaginal tear was united by silk sutures and the perineal by silver wire and silk-worm gut, using only one silver wire as a base suture to hold together the ends of the sphincter muscle. The sanitary and hygienic surroundings were not good, and she had but little after-attention. She passed her urine, the vagina was washed out but a few times, and her bowels moved daily, after the second day. At no time was there any pus, and the entire laceration healed by first intention. When I called to see her on the twelfth day she had gone into a back room and was nursing her babe. In a final examination the perinæum was found as perfect as before labor, with no disfigurement of the vulva. I select this case out of many, as the conditions were less encouraging than in any of the rest. I have been so uniformly successful that I now have but little concern about getting a good result if the woman will obey instructions.

If the operation is well done, I doubt the necessity of drawing the water or tying the legs. Nor is it necessary to wash out the vagina often. The urine and the lochia are not poisonous, especially after the second day, if strict asepsis has been observed in the operation. I have used a variety of sutures, including silver wire, silk, silk-worm gut, and catgut, but I am not prepared to assume any positive position in favor of one over another, if they are properly prepared. I have not used the kangaroo tendon, but I am told by my friend Dr. Marcy that it is more reliable than the catgut, never causes septic infection, and is easily absorbed, but retains its integrity long enough for strong union to occur. It is doubtful if the catgut will do this in complete ruptures, if used as a base suture, or to hold the ends of the sphincter muscle together. Then the catgut is not always reliable, and sometimes causes septic infection. The silk suture would be as good as any were it possible for the tissues to absorb it. It can be buried in the tissues more easily than the catgut or the kangaroo tendon, but remains there to be encysted, or to finally slough out. The silk-worm gut is in many ways a typical suture, and may be used alone or with other sutures. If carefully used, it is one of the most perfectly aseptic sutures, but it can not be absorbed, and is so sharp at the ends that it cuts the tissues as much as the silver wire. I have usually buried this suture, but was nearly always compelled to cut it out, as the sharp ends would finally protrude through the tissues and cause irritation and pain. The sutures should be buried in the ideal operation in aseptic surgery, but we should use sutures that will be absorbed when the parts have adhered with sufficient firmness to prevent separation. In complete ruptures I have always used a base suture of silver wire; but if the kangaroo tendon, or any suture that will be absorbed, will serve the same purpose in keeping the ends of the sphincter ani muscle in contact, I would be pleased to adopt it.

In the secondary operation the patient must have preparatory treatment. Do not operate until the parts have healed. Have the woman in reasonably good health, purge her two or three times a day for nearly a week before the operation, and give her mainly liquid food that does not form much solid feces.

Just before the operation she should wash her entire person carefully with soap and hot water, and also wash out

the vagina with a gallon of hot water. In cases where the cervix is abraded, so as to cause a profuse acid discharge, it is best to treat this condition and not operate until the surface is nearly healed over. The operation should be done about a week or ten days after the menses. With one or two fingers in the rectum as a guide, in partial ruptures, the splitting may be done in five minutes. The knife should be introduced at the muco-integumentary junction, just in front of the anus, and pushed up under the tissues until they are divided as high up as is needed; then, by cutting deeply on each side, the muscles and fascia will be exposed. The outer line of the incision must follow the line that marks the junction of the skin and mucous membrane. If the rupture extends into the bowel, then the lateral incisions should go deep enough to expose the ends of the sphincter ani muscle, and be made on the sides of the labia just as in the incomplete cases. The recto-vaginal septum should be separated up a quarter to half an inch by carefully dissecting the vagina from the rectum through the connective tissue. Bleeding is not so troublesome as that following the superficial denudation, and can usually be quickly stopped by sponging, irrigation, exposure, or torsion, and, if necessary, by catch forceps; or a fine gut ligature may be thrown around the bleeding vessel.

Capillary bleeding does not delay the operation, for, if the parts are in perfect coaptation, the pressure will control hæmorrhage, and union will not be interfered with. Where any form of an aseptic animal suture is used, the needle should be introduced, and brought out just within the lower or external edges of the raw surfaces, so that when they are united the suture will be concealed or buried in the tissues. Sometimes a few superficial sutures will be required. The sutures should be so introduced as to be entirely covered by the tissues, and to bring the surfaces into even and exact apposition. If the sphincter ani is ruptured, I always use the base suture after the fashion of Emmet. In incomplete ruptures the deep-buried animal suture, used after the fashion of Schroeder, may serve an excellent purpose in the practice of an expert operator; and, where the splitting has been made extensive, the parts are brought more perfectly in apposition by using a continuous suture, or one or more separate sutures at the bottom of the wound before introducing the deep perineal sutures.

In complete ruptures, about three or four deep sutures will be required, and sometimes that number is required where the sphincter ani is intact. If the rent in the recto-vaginal wall extends up more than an inch, it is usually necessary to suture this part before introducing the perineal sutures, but the operations should be completed at one sitting.

When the tissues on each side and at the apex of the rent are deeply split, the recto-vaginal surfaces should be well separated, and brought together by one or more sutures after the fashion of Mr. Tait in his vesico-vaginal fistule operations; or, if this can not be done, the split edges may be united by interrupted sutures, or by a continued suture, so introduced as to be buried in the flaps, going into neither the vagina nor rectum.

This operation exposes and brings together the ends o

the perineal muscles and fascia and the fascia that holds the rectal and vaginal walls in position, and restores the perinæum and the pelvic floor to nearly a normal condition, with about the same resisting power as before the injury occurred. In operating for incomplete ruptures with rectocele, the recto-vaginal septum should be split up to nearly the apex of the vaginal protrusion.

No tissue should be destroyed except jagged edges in some complete ruptures; the dissected part assists in protecting the wounded surface against the dangers of infection from uterine or vaginal secretions, and also increases the thickness of the perinæum. I have never had a recto-vaginal fistule after an operation for complete ruptures, nor do I believe it will often occur if the operation is correctly done. It is immaterial whether sponges are used or the parts cleansed by constant irrigation with clean water. It will be observed that I do not allude to antiseptics, but speak of asepsis, or perfect surgical cleanliness. Weak solutions of bichloride of mercury or of carbolic acid would probably do no harm; but if we depend on their use and do not observe the laws of absolute cleanliness, our operations will not always succeed. I do not wish to inveigh against the antiseptic craze, for it has resulted in much good by directing the medical mind to the necessity of a rigid observance of all the laws of cleanliness; and the technique of surgical operations, even in minute details, has been wonderfully perfected. Septic infection does not follow my operations, and I have but little fear of it so long as I continue to observe the rules that now govern me. I do not remove the deep base wire sutures for about one week, and allow the patient to get out of bed from the tenth to the fifteenth day. I have got equally good results by constipating the bowels and by allowing them to move daily, but I do not think it good treatment to constipate the bowels for from five to eight days, as was once the custom.

In nearly every case I prefer to have a soft or a liquid stool each day after the operation, and especially after the third day. I could relate many interesting successful operations performed by me after the fashion described during the last six years, in complete and incomplete ruptures, illustrating the position I assume, but I am sure it is not necessary to do so.

DYSPLEPTIC DYSPNŒA.*

By W. H. KATZENBACH, M. D.

THERE are probably no functional disorders for which the general practitioner is oftener consulted than those included under the term dyspepsia. Trousseau, in concluding his lecture on this subject, says: "Never forget that dyspepsia will present itself to you under aspects and under forms most varied." Cough, pains in the chest, palpitation, vertigo, constipation, diarrhœa, various neuralgias, and certain forms of skin disease, are mentioned by writers as of frequent occurrence in dyspepsia. But there is one symptom of this disorder which is not mentioned by most authors, and has received from none the consid-

eration its importance demands. That symptom is *dyspnœa*. This form of dyspnœa usually accompanies other symptoms recognized as dependent upon dyspepsia, but in some cases it is so predominant that the other symptoms present are overlooked, and the real nature of the dyspnœa, for a time at least, may not be determined. The amount of suffering during an attack is not inconsiderable, and the anxiety, apprehension, and dread of the existence of some grave disease of the heart or lungs add to the distress.

Dyspeptic dyspnœa is characterized by a sense of weight or oppression across the chest, an almost constant desire to draw a long breath, and a feeling that the air does not enter the lungs to a sufficient depth. Repeated inspiratory efforts are made. The body is fixed in some certain position, or a sudden quick change of position is made before a satisfactory inspiration is obtained, but the relief is of short duration, and these efforts must soon be repeated.

Diversion, intense occupation, or active bodily exercise, such as rapid walking, sometimes mitigates or relieves the attack. None of these ever aggravates it. Dyspeptic dyspnœa occurs after meals, in the intervals of stomach digestion, and not infrequently at night. The duration of the attacks is variable, but they usually extend over a considerable portion of the day or night. They recur daily, or at intervals of a few days, for weeks or months, or there may be but a single attack.

There is a more alarming form of dyspeptic dyspnœa, the paroxysms of which occur at night only. Attention was called to this a few years ago by patients who presented themselves complaining of severe attacks of shortness of breath or smothering coming on at night, and unaccompanied by wheezing, as in asthma.

Physical examination of the chests of these patients gave no signs of pulmonary or cardiac disease, and the urine gave no evidence of kidney disorder. The only accompanying symptoms that could be obtained related to the digestive organs. This variety is less frequent than the milder form of dyspnœa previously described. The writer has seen only a few examples. The paroxysm occurs usually after the patient has gone to bed. He is awakened out of sleep with a feeling of weight across the chest, a distressing sense of suffocation, and inability to get his breath. He sits up quickly in bed and makes strong efforts to inspire, but the air does not seem to enter his lungs. He becomes nervous and anxious. No position gives comfort. He gets out of bed, sits in a chair, walks the floor, probably goes to an open window, lies down, sits up again, but obtains no relief. Becoming excited, his heart beats rapidly, and this increases his distress and anxiety. The respiration is slow, irregular, and sighing. The expression is one of great suffering. The face is pale; the surface is cool. Perspiration may appear on the forehead only or involve the whole body. Examination of the lungs reveals no abnormal signs except possibly feebleness of the respiratory murmur. The heart's action is usually rapid and irregular; it may be slow and regular. No albumin is found in the urine, but this secretion is sometimes dark and of high specific gravity, depositing urates and uric acid.

The attack lasts from half an hour to an hour or more.

* Read before the New York Clinical Society, April 27, 1888.

It subsides gradually, and the patient falls asleep; but he may be awakened by another before morning. The attacks may recur several successive nights or at longer intervals over a considerable period. There may be but a single attack.

Dyspeptic dyspnœa in its ordinary and mild form is to be distinguished from that of anæmia or chlorosis and hysteria. In anæmia the breathing is rapid while the individual is quiet, though he may not be conscious of it, but it is still more rapid, labored, and suffocative from effort or excitement. The habitual pallor of such patients assists in determining the condition. In hysteria, dyspnœa is accompanied with other signs of the disease.

The more severe and nocturnal form of dyspeptic dyspnœa is to be differentiated from that occurring in uræmia. In the latter the difficulty of breathing is very distressing, but the sufferer is less excited. In bed, with his head and shoulders thrown back, he gasps for breath quietly but with great effort. The pulmonary signs are negative, but his heart is hypertrophied, his arteries are tense, and the urine further reveals the existence of renal disease.

In bronchial asthma the dyspnœa is expiratory. The breathing is audible at a distance, and signs of bronchial spasm are obtained by auscultation.

In the dyspnœa from cardiac disease the respiration is panting. Cyanosis and anasarca are present, with other symptoms and signs of heart weakness.

In the dyspnœa from laryngeal, tracheal, or bronchial obstruction from inflammatory thickening, the presence of growths, foreign bodies, and the pressure of aneurysm or mediastinal tumors, the breathing is slow, labored, noisy, and stridulous during very slight effort, or even when the patient is quiet. Examination completes the diagnosis.

In pleurisy, at the outset the respiration is short and jerking, with sharp, suppressed cough. Subsequently, during effusion, it is labored, with livid lips and cheeks.

In pneumonia the breathing is rapid, with or without dyspnœa. The face is flushed and the nostrils dilate in inspiration.

In these as well as in other diseases of the respiratory organs—as phthisis, pneumo-hydrothorax, broncho-pneumonia, etc.—the clinical history, associated symptoms, and physical signs will determine the pathological condition.

In dilated stomach or intestine, ascites, and abdominal tumors, the dyspnœa is a constant distress, unrelieved by inspiratory efforts while the mechanical condition producing it persists.

The majority of cases of dyspeptic dyspnœa yield readily to treatment directed to the morbid conditions present in the digestive system, but some resist for a long time the measures employed for their relief.

If the attacks of dyspeptic dyspnœa are of the milder form, and occur in the intervals of stomach digestion, those measures are to be employed which improve the functions of the digestive organs and restore nutrition to a healthy state.

Diet, clothing, bathing, hours for rest and sleep, as well as for exercise and diversion, are to be regulated. The abuse of alcohol, tobacco, coffee, tea, and venery must be corrected.

Electricity, massage, and sea-bathing are to be considered as valuable agents in the treatment of the chronic dyspeptic.

Flatulent and atonic dyspepsia, as a rule, is relieved by the alkalies before meals in combination with *nux vomica* and other bitters; or by mineral acids, with or without *pepsin*, after meals. Constipation, if it exists, will receive attention.

If the patient suffering with a severe attack of dyspeptic dyspnœa has recently taken food, his stomach should be evacuated at once by means of an emetic or the tube, and, if necessary, further washed out. This may be followed by the administration of strychnine and the bicarbonate or salicylate or sulphocarbonate of sodium, with aromatic ammonia or chloric ether.

In a case of furred tongue, foul breath, and headache, a mercurial cathartic is indicated.

This brief paper is presented with the object of drawing more general attention to the subject of dyspeptic dyspnœa, and as an introduction to the narration of the following case:

Mr. A. Y., aged fifty-two, native of the United States, a lumber merchant, was brought from an adjoining State by his family physician, September 30, 1887, on account of a difficulty in breathing which had existed for five years. Previously he enjoyed perfect health. At that time he began to suffer pain between the shoulders (upper dorsal region) and shortness of breath. These symptoms have continued off and on to the present. Besides, he complains of flatulence and belching after meals. He has no headache, no tinnitus, no vertigo. His appetite is good; he has no nausea; no pain or difficulty in swallowing. At times a fluttering is experienced in the epigastrium. His bowels act regularly. No urinary symptoms are present.

Two or three hours after eating he has a burning sensation in his hands, forearms, feet, and legs. When his breathing permits he sleeps well.

He lost weight in the spring, but has since regained it. He attends daily to his business, which keeps him out of doors.

He is of average height, of spare but muscular build, with a complexion testifying of his out-door life. Says he is as "tough as a knot." His habits are, and have always been, temperate in every particular. He has never had gout or rheumatism.

His mother died at the age of seventy-three of rheumatism and dropsy; his father, at seventy-two, from what cause he does not know. A sister died at twenty-three of consumption. Three sisters and two brothers living enjoy good health. His breathing has these characteristics: Sitting or lying down he has the desire, more or less constantly, to "draw for a long breath," but he "can't get it down." At intervals of a few minutes he assists the inspiratory efforts by "giving a twitch," or sudden twisting movement of his body, which seems to remove the difficulty, and "the air, as a general thing, goes right into the lungs." He has this dyspnœa several days in succession, then for a day or two is free from it. Rapid walking and exercise do not affect it, unless to relieve it somewhat. Some days, when occupied more than usual, or when excited, it does not annoy him at all. If he falls asleep immediately on retiring at night, he usually rests until morning, but the dyspnœa frequently wakes him out of sleep. If he becomes nervous during the attacks, he has a fluttering at the pit of the stomach.

His present condition: Conjunctivæ yellowish, tongue clean, pulse slow, regular, and of good volume. Chest well formed, and its movements normal in conscious respiration; pulmonary

resonance good. Respiratory murmur somewhat feeble generally over both lungs, but the quality is vesicular, and the rhythm normal. No râles are present.

The heart apex is in its proper situation, the impulse is good, the sounds are excellent, and no murmurs are heard. Venous hum is present in the neck. There are no signs of thoracic aneurysm. The abdomen is not distended or tympanitic. By palpation no tumor can be discovered. The liver and spleen are not increased in size. The urine is of good color, acid reaction, with specific gravity 1.025, and contains no albumin or sugar.

He was advised about his diet and habits of eating, and was directed to take, one hour before each meal in a cup of hot water, a powder consisting of sodii bicarbonat., gr. xv, and magnesiæ calcinat., gr. v; and, shortly after each meal, sodii bromidi, gr. xx, and carbonis ligni, gr. x.

October 18th his physician writes: "He seems better, has a good appetite, and rests well nearly every night. The sallow, lithæmic appearance of his skin is removed, and he is in better spirits. In the day-time he has to 'pull for his breath,' if he has eaten any food which disagrees, as to-day he ate a little cold cabbage for dinner and felt the effects very sensibly. He is quite active, attending to business."

On November 10th he seemed better, but was losing courage. He was advised to continue the powders of sodium and magnesium before, the following pill after meals:

R Extr. hyoscyam gr. ss.;
Strychninæ sulphat., { āā gr. $\frac{1}{60}$;
Acidi arsenios, {
Quininæ sulphat. gr. ij. M.

He was not seen or heard from until April 24, 1888, when he presented himself, feeling better, although, as he confessed, he had not faithfully carried out the line of treatment laid down. Pain between the shoulders has disappeared. He complains of soreness a little above the navel when he "draws for a long breath," but at no other time. Breathing is not affected by rapid walking. His appetite is good; flatulence and eructation have been entirely relieved; nausea or drowsiness is not present. Burning sensations are still experienced in the extremities two or three hours after meals. His strength is preserved. When lying on his back, respiration gradually becomes slower and weaker, and then he is forced to make respiratory efforts. He attends to his business daily with a clear head, and thinks he is better on this account.

Tongue clean and moist; pulse 60, regular, of good volume; respirations 16; cardiac and pulmonary signs normal. Abdomen not distended. Slight tenderness is elicited over the region previously mentioned as painful during dyspnoea, but no tumor can be felt. The liver and spleen are not enlarged; urine, specific gravity 1.019, acid, contains no sugar or albumin, no pus, no crystals, no casts.

He was further advised as regards diet, and directed to continue sodium and magnesium before meals. The following pill was prescribed to be taken after meals:

Extracti hyoscyami gr. $\frac{2}{3}$;
Acidi arsenios gr. $\frac{1}{60}$;
Strychninæ sulphatis gr. $\frac{1}{60}$;
Quininæ sulphatis gr. jss.;
Pulv. ipecac gr. $\frac{1}{6}$. M.

Cadaverin.—"It has been held to be demonstrated that several ptomaines are capable of provoking suppuration in the rabbit without the presence of micro-organisms. Behring has attempted to ascertain whether iodoform can prevent such a suppurative process. Cadaverin and iodoform are mutually destructive, so that the former loses its pyogenic properties."—*Lancet*.

THE MORAL AND SANITARY USE OF HOUSE-TOPS.

BY JOHN V. SHOEMAKER, A. M., M. D.,

PHILADELPHIA.

DICKENS somewhere says that Americans are the only people in the world who ever found out what to do with the small of the back—they sit on it. Americans are certainly the most inventive people in the world, but it must be confessed that their development of material agencies in the way of comfort—except in such rough-and-ready ways as that which Dickens describes—has certainly not been at all commensurate with their ability to produce novelties in response to any other need. This, as we must argue from their having produced so much greater things than those within the lines of comfort, is because they have not felt the need, and the fact of their not having felt it is naturally explained by the heretofore busy, eager, striving life in other directions of a primitive population. The late evolution of our parlor-cars and other traveling equipment, besides several other things only lately produced, bears out the truth of these assertions.

There is no point of simplicity, except Jeffersonian, that even pretends to be defined, and even that is variously conceived, as demonstrated by the practice of its advocates. The luxuries of one people are the necessities of another. The luxury of the same people may become in a few years the necessities of their life. The comfort of farm-life would be discomfort in a city, the food there satisfactory would be unpalatable in a city, for taste in the respective places has been educated on a different basis, and the conditions of air and employment are entirely different. We have proceeded at sufficient length to show that, men being in tendency essentially the same everywhere as to their material likings and dislikings, the reason that we find them unlike in requirements and tastes is owing to the education of different circumstances. Each and all of them follow the lines of least resistance, obtaining what they can as easily as it is procurable, and under the limitations of the immutable laws of their vicinage. The nomadic hunter does not pine for kitchen utensils, or a *fauteuil* on which to rest his weary limbs. He roasts his meat before the fire, and seats himself with *his* perfect comfort upon grass or stone, while the luxurious denizens of cities, and even the laborers within their confines, need tables and chairs for comfort. The sailor dips his fingers or fork into the promiscuous mess-kit, while even the rudest log-cabin has by comparison some pretense to style.

Comfort, then, is only a relative idea that may vary even in the same individual at different periods of his life, depending upon the circumstances into which he is thrown. Beginning at the foot of the social ladder, the first requirement of existence—mere existence—must be satisfied before even a thought is bestowed upon what we think of as comfort. Then comes, with an advance, the comfort reached by those who have passed beyond the struggle for mere sustenance, clothes, and shelter. And finally come the varying degrees of comfort, as wealth is acquired, through which many men are obliged to minister to the comfort of one,

until luxury at its highest point is reached, there entailing manifold *discomfort*. Thus extremes truly meet, leading for that reason some of the wisest men who ever lived to say that the happiest of any of the conditions of men lies in the middle walks of life.

We Americans up to the present time, when a new departure has taken place, have been too much occupied in the development of an enormous country of wonderful richness to have had much time left for the study and achievement of comfort. Up to only a few years ago even the architecture of our buildings for every purpose was patterned in servile following, with only slight modifications, upon what had gone before. The internal arrangements, too, of our houses exhibited no evidence of progress. Even now, when there has been a recoil from the old practice and buildings are going up which in their adaptation exteriorly and interiorly to needs would do credit to any part of the world, there is in many other instances far more attempt at æstheticism than at study of what should be the primary requirements of architecture. Ruskin said many a true word amid many a false one, and never a truer one than when he declared with his usual emphasis that architecture, alone of all arts, was based on the useful, and that its examples must justify their right to existence by conformity to this law.

The kind of climate in which a dwelling is erected is necessarily the first condition to be considered, as determining the character of the structure. Many other considerations—the exposure and what not—claim notice before a thought should be expended upon the question of architectural design. Here it is where we are often grievously at fault, the character of the climate hereabouts being often not taken at all into consideration. In Canada, among a people whom we consider comparatively benighted, the people recognize that they live in a climate of great rigor. Consequently they adopt not only double doors, but double windows there. We here in this locality are living in what is meteorologically known as an extreme climate—a climate having extremes of heat and cold—and yet our dwellings very inadequately conform to that fact. With ample supplies of coal, if we can afford to buy them, we are sure of being able to keep dwellings warm, but there is no recognition whatever of the demands which the terrible heats of summer make for a change.

It would, some years ago, have been as unavailing as talking to the winds to suggest that the roofs of this city should be so arranged as to be occupied at night during torrid weather. Yet I can remember that, even as a lad—when, on some occasions, I sweltered in this city for two mortal weeks on a stretch, in company with other equally miserable beings who could not get out of town—I could not help thinking that if the dwellings had had but some means of allowing people to occupy the roofs, what incalculable discomfort and suffering could have been spared? The city seemed then, as it seems now, as if built for people who all the long summer are at the sea-side or on the mountains. When I pass now, as then, through alleys teeming with a population of people overflowing on to the narrow sidewalks, on door-steps and cellar-doors, with fretful babies and squalling children occupying every nook, I

can not but think, as I thought then, that much of this suffering might be spared and many a life saved, and, if not to be snatched from death, at least brightened by a brief release from the depressing misery of heat.

At last the day has come when—steps having been taken, not for the sake of the suffering poor, but for that of the luxurious, who must needs have hanging gardens from which to waft the fragrant smoke of the nicotian weed heavenward in thankfulness for temporary relief from the torrid plain below—it becomes possible for the humanitarian to put in a plea for the poor who can not go to sea-side or mountain, who must suffer, whether in health or sickness, from the lamentable lack in our city of means to enable the denizens of crowded quarters to breathe a breath of fresh air. It is said in “The Annals of Hygiene” for September, in noticing another article on this topic, that “to construct new houses with such roofs would put a hard strain upon buyers and renters of houses.” In the same article, in another place, the doubt is expressed of the likelihood of the day ever coming “when a city in the United States shall have its roofs comparable to those of the towns of Syria, which are sometimes called cities.” Perhaps not; but it will not be because of the strain put upon even the poorest classes of people here. The people here can certainly afford as much as the inhabitants of Syria. This periodical quoted being the official organ of the State Board of Health of Pennsylvania, and deservedly a publication of much influence, I hope that its writers will eventually see their way more clearly than at present to the consummation to which our desires point.

There is no reason why the modification suggested in dwellings in Philadelphia should be an expensive one. It is not, in the first place, needful that the whole roof of an individual house should be taken into the design. All that is requisite is that the lateral or parapet walls, as now required by law, should be run up a little higher, so as to secure on the roof the same privacy from sight as a family enjoys in the interior of their dwelling, and even that might in some places be dispensed with. The front and back walls could be supplemented with an ornamental railing. Then whatever portion of the circumscribed space it may be desired to devote to the purposes of occupancy should be covered with horizontal planking, laid slightly apart so as to allow water to pass through and out to the usual gutters and spouts. For those who could afford it, a few potted plants on a bench would lend pleasantness to the aspect of the place, from which, in the midst of air comparatively pure, fanned by whatever breezes were stirring, the poor dwellers in stuffy courts and alleys could revel in the hot evenings, and sate their fainting bodies and souls with the view far and near, bounded only by the immeasurable canopy of heaven. Can any one doubt that such relief from heat after toil, and such recreation in the summer evenings, would go further in the cause of health and morality than any other device that could be named, or that carrying out the plan is perfectly feasible? I may add that the introduction of this plan here is only a question of time; the thing among a people so intelligent as ours will surely come to pass. But time is a valuable element in life, so let every one who

can promote the advent of so great an increase of comfort and alleviation of suffering in this city do his part to forward the good work.

CARDIAC DISEASES IN THE NEGRO RACE.

By PEARCE KINTZING, M. D.,

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THE unusual percentage of the various cardiac lesions in the summary of general cases treated at this clinic during the past summer first drew the writer's attention to that subject, the result of which is here briefly stated.

A fraction over fifty per cent. of all the cases treated are of the negro race. This race presents little that is attractive to the general practitioner. The negro's "miseries" and "agonies" are numerous and shifting, his habit of magnifying every fleeting pain to a superlative degree is well known, and mendacity seems to be a universal quality. On the other hand, the amount of time and tact required to elicit rational answers sufficient to form a diagnosis, owing to the limited understanding and more limited vocabulary of the race, cause the general practitioner to resort to a placebo rather than subject himself to the unpleasantness of making a physical examination; the more so as they are easily appeased, and are pecuniarily probably the most unremunerative class of his patients. For these reasons we believe that many cases fell to the clinic after having passed unrecognized through other hands, since frequently the symptoms enumerated bore no reference to the true malady, and only a small percentage of the cases could be traced to acute inflammatory affections. The cases under consideration include the various chronic valvular lesions, simple hypertrophy, and palpitation. The various functional disorders are unusually frequent in the negro, and generally accompanied by nervous and hysterical phenomena or by constipation, which in this race is common and obstinately chronic, especially among the females. Sometimes palpitation was accompanied by vertigo, dyspnoea, and a burning pain under the xiphoid cartilage. One case, which has been under observation at intervals during two years, presents, as its only symptom, dyspnoea, but no evidence of pulmonary obstruction can be obtained by physical examination. There exists considerable left-sided hypertrophy and the ventricular contractions follow almost in metrical rhythm, thus: one—one, two—one, two, three—a pause of somewhat varying length preceding the "one."

Most of the cases of palpitation occurred in young subjects, and these were associated with hysterical signs in a majority of instances. One case presented vertigo with tinnitus aurium as the predominant symptom, and this symptom was frequently found associated with anæmia, increase in the cardiac rate, and the usual symptoms of chlorosis. Another large class of cases—attended with pallor and a relaxed condition of the mucous membranes, a flabby, pendent, soft palate, and elongated uvula, a general enlargement of the cardiac area and a marked bruit, denoting a functional dilatation, accompanied apparently by some slight roughening of the serous lining, sufficiently marked in some cases to cause dyspnoea and general distress—promptly improved

upon the exhibition of the tincture of the chloride of iron. In some of the cases of this class the patient complained of sleeplessness, due perhaps to the inefficiency of the cerebral circulation, as well as to the watery condition of the blood. Neither change from the horizontal position nor careful attention to diet seemed in any wise beneficial.

Lastly, among the functional disorders were several cases of rapid fluttering action, accompanied by pain in the back and in the course of the intercostal nerves, with a sensation of constriction in the throat—symptoms which have received marked attention lately in Paris as pathognomonic of neurasthenia.

With regard to the ætiology of functional disorders, the general characteristics of the race would lead us to expect a large percentage of such cases. They are directly traceable to their emotional natures, hysterical tendencies, early marriages, frequent pregnancies and overlactations—it being not uncommon to prolong this function from the birth of one child until the next pregnancy is well advanced—excessive use of tea, tobacco, and alcohol, and the long list of digestive and dyspeptic disturbances to which the negro is peculiarly liable, owing both to these excesses and to his immoderate appetites and fondness for cold victuals. The relative frequency of functional cardiac disturbances in the negro and the white race, as observed at this clinic, was about three to one.

Next in frequency to functional derangements stands mitral valvular disease without aortic implication. The relation of mitral disease to rheumatism was especially considered, and was not found to be so constant as one would be led to suppose when the prevalence of rheumatism in the negro race is considered. While some cases were undoubtedly traceable to antecedent attacks of acute rheumatic inflammation, yet the number was comparatively small. Rheumatism in negroes is chiefly subacute or chronic, and various rheumatic pains enter almost universally into their own histories of their maladies, chiefly because they are familiar with the word. But a large number of patients presenting themselves with true rheumatic histories were examined as a matter of routine, and in but few was the cardiac complication found to exist; nor, as has been mentioned, was it possible to trace the lesion to an acute febrile affection in many cases. As regards frequency, about two thirds of the total number of mitral lesions occurred in the colored race.

Aortic valvular disease, as a primary affection or with implication of the mitral valve, was likewise found to be far more frequent than in a corresponding number of general cases in the white race, but the preponderance was not so great as in the varieties previously mentioned, and no symptoms worthy of special note were observed.

One advanced case, presenting aortic insufficiency with mitral implication, hypertrophy, and general œdema, gave a curious though imperfect history. The father had died of apoplexy at the age of seventy. The mother had died of "heart disease" at an advanced age. Of eleven brothers and sisters, all had died before the age of thirty except two. In three of these, death had been attended by dropsy, and no fewer than three others had died suddenly. The patient, who was in her fifty third year, was the youngest in the family. She had never

had rheumatism, but had had typhoid fever twenty years ago and varioloid four years earlier. Three years ago she had had an apoplexy, followed by left-sided hemiplegia, from which she dated all her cardiac symptoms. She has partially recovered from the hemiplegia. It is to be regretted that the facts bearing upon this interesting case could not be obtained with greater fullness and accuracy.

With regard to the causation of valvular diseases and their greater relative frequency in the negro race, perhaps the explanation lies in the greater frequency of specific diseases, both inherited and acquired. Rheumatism and scrofulous affections play their part as well as their unhygienic surroundings, their general negligence, addiction to exposure and to drink, but, above all, in the amount and character of their labor. Both males and females belong to the class of heavy workers—stevedores, hod-carriers, coal-heavers, draymen, and washerwomen. In many of the cases observed, the influence of this special factor could be traced.

Fatty infiltration as evinced by general obesity, dyspnoea upon exertion or during excitement, vertigo owing to weak or disturbed cerebral circulation, an enlarged area of cardiac dullness and intermittency, unaccompanied by valvular lesion, was frequently found in negro women of advanced age, in whom the accumulation of fat is much more common than among the males. True fatty degeneration, however, seems to be quite rare, as but few indisputable cases were observed; and in respect to fatty degeneration, it is concluded that the condition is of less frequent occurrence than in the white race.

It may be interesting to note, in connection with allied diseases, that but one case of exophthalmic goitre in the negro race in a total of eighteen hundred cases presented itself. Since there were but two cases in the white race during the same period (all three cases being in females), no conclusion of any value can be drawn as to the relative frequency of this disease in the two races.

EXAMPLES OF FRACTURES AND THEIR UNION IN THE BONES OF BIRDS.

BY R. W. SHUFELDT, M. D.

DR. JOHN BLAND SUTTON, Lecturer in the Royal College of Surgeons of London, has during the past few years, by his studies in comparative pathology and by his admirable series of published memoirs upon the same, brought up the subject of the investigation of the diseases of all the lower orders of vertebrates to its proper plane, and clearly shown to the profession the high importance of such researches. A large number of the cases examined by Dr. Sutton were of animals either dead or suffering from various manners of diseases in the zoological gardens of London, and one of the ideas uppermost in his mind during his labors was to demonstrate that a number of the pathological states to which man was subject, diseased conditions of greater or less obscurity, could in many cases have light, perhaps, thrown upon the question by the study of disease in the various forms of animals; that there was an evolution in disease; and pathological states that many of the

vertebrate animals at least were subject to, departures from a standard of health, were quite comparable with similar abnormal states in man, which states in them were liable to be presented in a more simple form and characterized by a less complex array of symptoms. In short, diseases should be studied in their entirety to be fully understood, and to be able to thoroughly grasp any single problem in pathology we must search it out in all its highways and by-ways throughout all nature, and to accomplish this we must carry our investigations with the utmost exhaustiveness into the very beginnings of certain diseases among the more lowly forms of life. Since it has been through our studies of the morphology of all animals alone that anatomists have been enabled to explain a great many of the structures in man's body, which were by no other means explainable, it would surely stand to reason that by a similar course of study the affections of those same structures in the less highly organized types would go toward explaining the diseases of the corresponding parts in ourselves, and such has been found to be the case.

This being so, the recording of any facts of the kind can now only be construed as contributions to pathology and to the *science of pathology* in its widest sense. And the complete digestion of all the accumulated knowledge of this character in the future will tend to bring about an understanding of pathology in all its breadth, and in due time we shall have an insight into its most complex and far-reaching questions.

In the present paper the writer has no further aim in view beyond inviting attention to a few interesting cases of fractures in birds that have recently come under his observation, a short chapter setting forth some of nature's surgery, and briefly told.

During the early part of August, 1888, while residing in New Mexico, I was presented with a living specimen of an adult female of the red-tailed hawk (*Buteo borealis calurus*), which had been secured by having been shot with a 0.45 caliber Government carbine while flying high in the air. It was impossible for me to discover the wound on the bird, and he was apparently as whole and as vigorous as any hawk alive. About three weeks after its capture, however, circumstances induced me to kill the specimen for the purpose of securing the skeleton. Imagine my surprise when I found that that great rifle-ball, fired out of one of the most powerful arms in the world, had entered the left side of the chest of this hawk, passed obliquely through, narrowly escaping the heart, and emerging on the opposite side. Now, this species has seven costal ribs (hæmapophyses) that articulate with the sternum and the ends of the vertebral ribs; all of these had been broken across by the ball, while at the wound of exit the scapula of the right side had been twice fractured across at its posterior third, but the vertebral ribs were apparently uninjured. In healing, the costal ribs each individually had made a good union and there was no ankylosis among them. The blade of the scapula, something in form like a miniature blade of a cimeter, showed a most interesting condition, for, notwithstanding the fact that the apical piece had been drawn down some little distance toward the sternum, it had, nevertheless, by the aid of the second

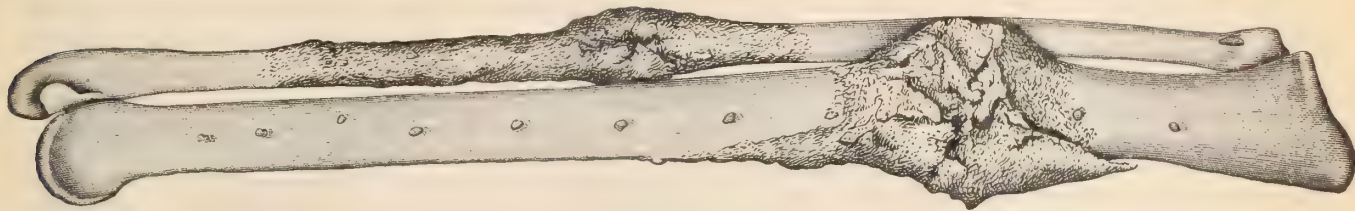
fractured piece, been included in the marvelous mass of callus which had been thrown out by this thin, blade-like bone, and all within the short period above specified. At the time of the bird's death, then, this injury had about healed, and the scapula, to all intents and purposes, was as useful as before, its anterior two thirds remaining intact and supporting at their distal extremity this great osseous mass to which all the now somewhat distorted muscles were still attached. Here was a fearful wound with a truly magnificent recovery, leaving all the parts in essentially as good a condition as ever. Further, this hawk showed that at some time or other there had been a superficial inflammation of both surfaces of the tarso-metatarsi and of the upper fourth of the left femur, on its posterior aspect just below the summit. From this inflammation it had also recovered, leaving the surface of the bone much roughened.

My second subject was a turkey vulture (*Cathartes aura*), secured at the same time and place and with the same weapon under the same circumstances, being shot while high in the air. This bird was in a wretched plight when I received it, having been kicked about by some brutal soldiers, and was more dead than alive. After being in my possession about a week, this bird thoroughly recovered, could fly well, and left me in doubt as to where the ball had hit him. At the end of this time I killed him with chloroform, and prepared his skeleton. This at once revealed the fact that an extraordinary fracture and its union had been

and it, too, was once more united, each palatine bone showing a slight deposit of callus upon its nether aspect, between the inner and outer laminae. These fractures had been made without any corresponding fracture of the naso-frontal region, and no doubt the superior mandible had not been thrown back far enough to bring this latter result about.

For many years past I have prepared a great many skeletons of birds, mammals, and other vertebrates, and, in the case of fracture of the bones of the wings in birds, I am convinced that the good unions that result, with scarcely any deformity or shortening, are largely due to the material assistance afforded on the part of the quills of the primary and secondary feathers, which act as efficient splints to the injured bones. Fortunate for birds that this is so, for doubtless, were any very marked distortion to follow, it would surely result in some abrogation of their powers of flight, and leave them helpless on the ground. Among mammals it is much the same throughout the class, for, with all the smaller representatives as with man himself, usually great deformity follows unless the parts are promptly and properly splinted. I have seen the femur unite in small rodents—such as muskrats and squirrels—where the two halves of the shaft of the bone were firmly joined at nearly a right angle, referring as I do, of course, to where the shaft is fractured across its middle.

Miserable deformity usually results, too, from fracture of the lower jaw in the smaller mammals, as is the case in



Left ulna and radius of a specimen of the turkey vulture (*Cathartes aura*), outer aspect, showing union three weeks after fracture from a .45 caliber carbine ball. Life size and drawn by the author from the specimen. (The larger bone is the ulna.)

sustained on the part of this subject. The ulna had been broken in two at the junction of its proximal and middle thirds, while the radius was similarly fractured at the middle of its shaft. Union was now complete, and a mass of callus was rapidly being absorbed at the sites of the fractures, and undoubtedly a wonderfully good result would have been attained in the near future had the bird been allowed to live; as it was, the union was perfectly firm. But the most extraordinary part of it all was that these two bones had remained practically straight, with absolutely no shortening in the radius, and only four millimetres shortening in the ulna, and withal with very little distortion. From blows that it had received in the right side and under the superior mandible, at about the time of its capture, there had resulted other fractures, which, in the dried skeleton, showed remarkably beautiful unions.

In the first case four of the hæmapophyses had been broken through their middles and united again without loss of freedom of movement or interankylosis, while in the latter instance both maxillary bones of the rod-like zygomas had been fractured across and handsomely fused again, and the rather broad blade of the body of the left palatine had been broken obliquely across, likewise through and through,

man, unless splinting is resorted to, and these remarks apply also to the pelvis.

In animals that possess the clavicles, however, the bone on either side may be occasionally broken across, and an unaided union result, with but very little appreciable distortion, and this may also be the case in man.

A PIN IMBEDDED IN A WOMAN'S HEART.*

By GEORGE L. PEABODY, M. D.

THE patient from whose body the heart that I show you was removed died in the New York Hospital on the 26th of last May. Unfortunately, she was under observation only a few hours, and only an incomplete history of her could therefore be obtained.

She was twenty-nine years of age, a native of Ireland, married, and a nurse by occupation. She said that one brother had rheumatism, but she gave no other morbid family history. She had never had rheumatism, malarial fever, or syphilis. She

* Read before the Association of American Physicians at its third annual meeting.

confessed to a very moderate alcoholic habit. On her admission she was suffering greatly from dyspnoea, and was unable to give a circumstantial account of her illness. Five years previously she had given birth to a girl, her labor having been uncomplicated. Five months previously she had again been confined, and up to the time of her admission was acting as a wet-nurse. She said that for some time previously she had passed less urine than normal, that it was high-colored, and that from time to time her feet had been swollen. For four months previously she had been short of breath, had suffered from palpitation, vertigo, *muscae volitantes*, tinnitus aurium, morning nausea and vomiting, and constant swelling of the feet and abdomen. Her appetite had been poor, her bowels regular.

At the time of her admission, on the 25th of May, 1888, at 4.30 P. M., her temperature was 100.8° F., her respirations were 44, and her pulse was 130. A specimen of her urine, obtained immediately, was of a yellow color, acid reaction, and 1.020 specific gravity, and contained a large amount of albumin, many hyaline and epithelial casts, and pus cells.

On physical examination, both pleuræ were found to contain fluid as high as the angles of the scapulæ, and there were a great many moist râles all over, both behind and in front. The heart-sounds were very feeble, and heard with difficulty. No murmur could be distinguished. There was œdema of the feet and legs. She was given acetate of potassium and infusion of digitalis, and passed a fairly comfortable night. The next morning she seemed to be doing fairly well, when she suddenly experienced great precordial pain, distress, and dyspnoea, which latter was intense. She was given morphine subcutaneously, but she continued to suffer, and died in half an hour, at 10.45 A. M.

An autopsy was made on the same day at 2 P. M. There was general anasarca; rigor mortis was well marked; the peritonæum was normal. The diaphragm was at the level of the fourth rib on the right side and of the sixth rib on the left side. There were 1,300 cubic centimetres of serum in the left pleural cavity, and half as much in the right. There were no pleuritic adhesions. *Heart*: The pericardium was normal. The heart was very slightly increased in size. The wall of the left ventricle was to a slight extent thickened; the cusps of the mitral valve were somewhat thickened, and there was a perceptible degree of stenosis of the mitral orifice. The other valves were normal. The muscular tissue was soft, flabby, yellowish, and in places contained fat. A black or blackened pin, the top of the head of which was free in the left ventricle, was seen piercing one of the papillary muscles attached to the anterior segment of the mitral valve, and penetrating the wall of the ventricle obliquely to the depth of three centimetres. The point of the pin was distant five millimetres from the external surface of the heart. The pin seemed eroded and was broken by accidental contact with the scissors, without, however, becoming displaced. There was no evidence of any recent inflammation in this neighborhood, but the endocardium in the neighborhood of the protruding head of the pin was greatly thickened and snow-white, and firmly adherent to the edge of the head. The endocardium at a corresponding point on the opposite surface of the ventricle was also thickened. This latter area of thickened endocardium measured a centimetre and a half in diameter, and could be more distinctly seen when the specimen was fresh than it can be now. The shaft of the pin just below the head seems to be unevenly thickened. Following the course of the pin there was seen a cicatricial depression in the papillary muscle, which is still distinctly visible. A most careful examination of the heart failed to reveal the route by which the pin had traveled to its present location. The œsophagus, stomach, pericardium, and great vessels were examined with great care and found to be uninjured. A microscopical examination of

many parts of the heart showed fat in the muscular fibers, but not so generally as had appeared to the naked eye. The right ventricle contained more fat than the left.

The *spleen* was normal. The *kidneys* were normal in size, they were intensely congested, their cortices were swollen, their markings were not distinct. The microscope showed the epithelium of the kidneys to be generally very granular, and also showed fat in some of the convoluted tubes. The *stomach* was found by the microscope to have an enormous amount of fat in its tubes, generally confined to the lower two thirds of them, but in some of them extending up to the surface of the mucous membrane. The fat was in the shape of very small globules; the epithelium was very granular. The *liver* was very fatty. The *bladder*, *ovaries*, and *uterus* were normal.

I show the specimen to the association as a pathological curiosity, and not in expectation that anything can be learned from it, though it is certainly interesting that even so small a foreign body as the upper surface of the head of a pin should have been for a long time free in the cavity of the ventricle without producing thrombosis.

The pin had evidently been in its present situation a long time, and in all probability had entered the body by the mouth. Whether it was causative in the production of the heart lesions, and secondarily of the kidney and other lesions, can only be a matter of conjecture in the absence of a definite history. I have in vain endeavored to obtain such a history from the husband and employer of the woman. A letter from the latter gentleman, a physician, states that during the week preceding her admission to the hospital she suffered occasionally from severe attacks of dyspnoea, but gives no facts of her antecedent history.

Invalid Cookery in the First Century.—In pleurisy the practice of the Roman physicians in the reign of Tiberius (A. D. 14–37) was to keep the patient on food as light and demulcent as possible (*cibus quam maxime tenuis et lenis*), principally on nutrient drinks (*sorbtiones*), of which barley gruel was a favorite, or, equally so, “broth in which leeks and a young poultry-cock had been boiled together” (*jus in quo porrus cum pullo gallinaceo coctus sit*). Readers of Lockhart's “Life of Scott” must remember the famous forty-first chapter, in which the author refers to Sir Walter's favorite dishes, “such as Scotland borrowed from France before Catherine de Medicis brought in her Italian *virtuosi* to revolutionize the kitchen like the court. Of most of these he has in the course of his novels found some opportunity to record his esteem. But, above all, who can forget that his King Jamie, amidst the splendors of Whitehall, thinks himself an ill-used monarch unless his first course includes ‘cocky-leekie.’” Mr. Lockhart, who was a well-read scholar, should have known that the savory broth referred to was as little French as it was Scottish, but was an important article in the invalid *menu* of the first century, if not indeed much earlier.—*Lancet*.

Typhoid Bacilli in the Kidneys.—According to the “*Lancet*,” “Dr. Konyeff has published some researches, which he has made with the help of Dr. N. V. Uskoff, on the microscopic structure of some little nodules found in the kidneys of typhoid-fever patients, in twenty-one cases out of 120 post-mortem examinations of bodies dead of this disease in the Alexandroff Hospital in St. Petersburg during the year 1887. The preparations were stained with a solution of methyl in dilute spirit and fuchsine in a 5-per-cent. solution of carbolic acid. In all the cases examined there were found in the center of the nodules colonies of slightly colored bacilli precisely like those of typhoid. No others were seen. In two cases these were successfully sown in nutrient jelly, and from them a double kind of colony was developed exactly like typhoid colonies. Potato cultivations were also reared, and the microscopical examination of these left no doubt that the jelly cultivations were cultivations of true typhoid bacilli.”

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 29, 1888.

A REVIEW OF THE YEAR.

It looks as if this issue of the Journal would be sent to press without our having been called upon to record during the year any of the epochal occurrences that form the most notable tokens of the advance of our art. But the year has been one of substantial progress, nevertheless. Perhaps the most striking novelty that has been brought out is the proposal, by Dr. Senn, of Milwaukee, to employ intestinal insufflations of hydrogen as an aid to diagnosis in abdominal wounds. An important new hypnotic, sulphonal, has come into common use, and it seems to be the general opinion that it constitutes a most valuable addition to the *materia medica*. The trials that have been made of erythrophlœine as a local anæsthetic have not resulted in raising that alkaloid to the rank of cocaine, but they are of interest as recalling the early experiments made by Dr. Hammond and Dr. Mitchell with the bark of the tree from which it is derived.

The procedure known as intubation of the larynx has continued to meet with favor, and its practice has gained decidedly in precision. Concerning saccharin, while perhaps not all that was expected of it as a sweetening agent has been realized, new therapeutic properties have been found to be possessed by it, and it seems destined to take its place as a drug having well-defined uses. The diversified purposes for which antipyrine has been employed are remarkable, and probably we can not yet mark out its full field in the treatment of disease. Among the subjects that have been earnestly discussed in this country and elsewhere are the surgery of the brain, especially by Dr. Roswell Park and Mr. Victor Horsley; inflammatory affections of the vermiform appendix and adjacent structures; the use of systematic exercise in heart disease, as prominently set forth by Oertel; and the general subject of tumors, particularly as considered in the recent discussion before the New York State Medical Association.

Society work has been active during the year. So far as America is concerned, the most noteworthy occurrence in this connection has been the successful inauguration of the Congress of American Physicians and Surgeons. Among other important and promising new organizations are to be mentioned the American Physiological Society, the Association of American Obstetricians and Gynæcologists, and the Southern Surgical and Gynæcological Association. Of the notable additions to the teaching facilities of the country, the Hoagland Laboratory, lately opened in Brooklyn, deserves special mention.

Of important legislation bearing upon medical matters there has been little or none. It is true, however, that the State of

New York is about to undertake an experiment that may turn out to be of considerable interest to physiologists—that of substituting electricity for the hangman's rope in the execution of capital punishment. Of much more immediate interest, and assuredly more closely bound up in true humanitarianism, are the excellent devices adopted by the Surgeon-General of the State of New York in establishing ambulance corps in the militia. In a number of the States, notably in the West and in the South, the State boards of health have continued to show commendable energy in their executive work and in diffusing sanitary information among the people, and the same boards or others organized for the purpose have accomplished much in keeping pretenders and incompetents out of the medical profession. We are sorry to be obliged to say that Congress has not yet taken action calculated to mitigate the unsatisfactory conditions under which medical service in the navy is expected to be undertaken.

The country has been free from epidemics of a character serious enough to work more than a local derangement of ordinary trade and travel, save in the matter of the outbreak of yellow fever in Florida, and in that case the restriction of the disease to a circumscribed area within the State and the ample precautions taken to prevent its recurrence next spring testify abundantly to the efficiency and fidelity of the officers of the Marine Hospital Service.

MINOR PARAGRAPHS.

POISONING WITH SULPHONAL.

In the "Deutsche Medizinal-Zeitung" for November 26th Dr. Bornemann, who has charge of an institution for the treatment of neurotic invalids, gives an account of the case of a physician, fifty-three years old, a victim to the morphine habit, to whom sulphonal was given among various other hypnotics. On one occasion sixty grains were given shortly after nine o'clock in the evening, and thirty grains more an hour after midnight. Sleep did not follow promptly, but the patient shortly showed symptoms of muscular inco-ordination of a decided character. It took six days for the ataxia to subside entirely, and during a portion of that time there was great mental depression. The author infers that the action of sulphonal is not confined to the cerebral cortex, for in this case the ataxia was of central origin, inasmuch as the patient's condition was the same whether his eyes were open or closed. Certainly the case should serve as a reminder that the use of sulphonal is not wholly free from danger.

THE UNIVERSITY MEDICAL COLLEGE.

SOME stir has been made in the newspapers over certain manifestations of discontent among the students of the Medical Department of the University of the City of New York. Meetings have been held by the students, at which their displeasure has been expressed at the action of the faculty in postponing the appointment of a professor of anatomy. It seems that they are desirous that the appointment should be given to a gentleman who has taught anatomy in the college for many years in subordinate positions. The faculty, on the other hand, have let it be understood that they preferred to wait, and at length to fill the chair by open competition. The position taken by the

students is creditable to them, viewed as a matter of loyalty, but it is to be hoped that their natural fondness for certain tried teachers may be reconciled with the course that the faculty may finally decide upon, for nobody can have the real interests of the school more at heart than the faculty.

THE HOSPITAL SATURDAY AND SUNDAY COLLECTION.

OUR readers generally are aware of the thoroughly commendable and efficient work done by the Hospital Saturday and Sunday Association of New York, namely, the collection of funds in the churches, in the synagogues, and through trade organizations to be distributed among the various hospitals of the city. These institutions are doing a constantly increasing work, and are yearly more and more in need of such an auxiliary to enable them to meet expenses. It is to be hoped, therefore, that this year's collection will show a handsome increase over those of former years.

THE VITAL STATISTICS OF NEW YORK.

THERE are signs that the Health Department's effort to secure a more general compliance now than formerly with the ordinances calling for returns of marriages and births are proving successful. For example, the department's report for the week ending December 1st includes returns of 302 marriages, 732 births, 58 still births, and 691 deaths. Returns of deaths have been unavoidable for many years past, but those of births, and marriages it has been possible to evade in many instances, so that commonly in former years the deaths reported exceeded the births, and that fact led to grossly misleading statistics.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 22, 1888:

DISEASES.	Week ending Dec. 15.		Week ending Dec. 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	21	8	16	5
Scarlet fever.....	210	31	241	53
Cerebro-spinal meningitis....	1	1	4	4
Measles.....	334	20	374	24
Diphtheria.....	133	23	144	49

The Medical Society of the State of New York.—The eighty-second annual meeting will be held in Albany on Tuesday, Wednesday, and Thursday, February 5, 6, and 7, 1889. We are asked to state that it will greatly facilitate the labors of the business committee if members and delegates desiring to read papers will immediately forward their names, with the title of their papers, to Dr. D. B. St. John Roosa, chairman of the committee, No. 20 East Thirtieth Street, New York. The following-named papers have been promised: "The Ætiology of Croupous Pneumonia," by Dr. Edward W. Sternberg; "A Clinical Study of Alopecia Areata and its Treatment," by Dr. L. Duncan Bulkley; "Chronic Headache," by Dr. C. L. Dana; "Vertigo, its Causation and Therapeutics," by Dr. J. Leonard Corning; "The Medical Treatment of the Diseases of the Urinary Organs in Children," by Dr. A. Jacobi; "The Treatment of Typhoid Fever," by Dr. S. S. Burt; "The Management of Cardiac Dilatation, based on its Ætiology," by Dr. A. W. Loomis; "The Municipal Control of Diphtheria," by Dr. Charles Storer; "The Prevention of Summer Diarrhoea among Infants, viewed in the Light of the Lesions," by Dr. L. Emmett Holt; "Some Sanitary Suggestions," by Dr. L. E. Felton; "The Diagnostic Value

of Spinal Rotation," by Dr. Bernard Barton; "The Uses of Galvanism in Gynaecology," by Dr. W. E. Ford; "The Management of Hip-joint Disease," by Dr. A. M. Phelps; "The Treatment of Hypertrophies at the Base of the Tongue," by Dr. W. C. Phillips; "Recent Advances in the Treatment of Hernia," by Dr. W. B. De Garmo; "A Plea for the Employment of Koeller's Method," by Dr. C. A. Powers; "The Orthopædic Treatment of Tubercular Disease of the Knee in Children," by Dr. V. P. Gibney; "A Contribution to the Surgery of Central Tumors," by Dr. L. S. Pilcher; "A Contribution to the Surgery of the Spine," by Dr. Robert Abbe; "The Disorders of Menstruation," by Dr. Andrew F. Currier; "The Treatment of Acute Inflammation of the Middle Ear," by Dr. Gorham Bacon; "The Operative Treatment of Hyperostosis of the External Auditory Canal," by Dr. E. Gruening; "The Use of Prismatic Spectacles for the Relief of Asthenopia caused by Insufficiency of the Ocular Muscles, with Reports of Cases," by Dr. D. Webster; "Considerations concerning the Operation for Hard Cataract," by Dr. Henry D. Noyes; "Membranous Rhinitis," by Dr. Frank H. Potter; "The Spectroscopic Examination of the Blood and certain Diseases of the Eye," by Dr. Lucien Howe; "Purulent Conjunctivitis of Infants and Blindness in relation to the State," by Dr. Lucien Howe.

The Journal of Cutaneous and Genito-urinary Diseases, beginning with the number for January, 1889, will be published by D. Appleton & Co. The editor, Dr. Prince A. Morrow, has associated with him in the editorial management of the journal Dr. John A. Fordyce, who brings with him a ripe experience in dermatology, and whose work will enhance the value of this popular and highly instructive journal.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 16 to December 22, 1888:*

ALEXANDER, CHARLES T., Lieutenant-Colonel and Surgeon, and KILBOURNE, HENRY S., Captain and Assistant Surgeon, detailed for duty on Army Retiring Board to meet at Vancouver Barracks, Washington Territory, at the call of the president thereof. Par. 22, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

CARTER, WILLIAM F., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 116, November 12, 1888, Department of Texas, is extended five months. Par. 4, S. O. 292, A. G. O., Washington, December 15, 1888.

MC CREERY, GEORGE, Captain and Assistant Surgeon, is granted leave of absence for one month. Par. 4, S. O. 265, Headquarters Division of the Atlantic, Governor's Island, N. Y., December 15, 1888.

HOPKINS, WILLIAM E., Captain and Assistant Surgeon, is detailed as member of the Army Retiring Board to meet at San Francisco, Cal., *vice* Major Henry E. Tilton, Surgeon, relieved. Par. 3, S. O. 294, A. G. O., Washington, December 18, 1888.

Society Meetings for the Coming Week:

TUESDAY, January 1st: New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg Medical Association; Medical Societies of the Counties of Broome (quarterly) and Niagara (semi annual—Lockport), N. Y.; Hudson (Jersey City) and Union (quarterly), N. J.; County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston—annual); Chittenden, Vt., County Medical Society; Baltimore Academy of Medicine.

WEDNESDAY, *January 2d*: Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of the City of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Philadelphia County Medical Society.

THURSDAY, *January 3d*: New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua; Medical Society of the County of Cayuga, N. Y.; Boston Medico-psychological Association; Washington, Vt., County Medical Society (annual—Montpelier); Pathological Society of Philadelphia.

FRIDAY, *January 4th*: Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *January 5th*: Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

OBITUARY NOTES.

Ira Russell, M. D., of Winchendon, Mass., died on Wednesday, the 19th inst. The deceased was born in Rindge, N. H., in November, 1815, and was graduated from the Medical Department of the University of the City of New York in 1844. After practicing in Winchendon for a few years, in 1853 he removed to Natick, Mass., where he remained until the breaking out of the Civil War, when he entered the volunteer service as surgeon to the Eleventh Massachusetts Regiment. In 1862 he was appointed brigade surgeon, and in 1863 medical director in north-western Arkansas. In 1865 he was brevetted lieutenant-colonel for meritorious services. In 1867 he settled in Winchendon, where he has since resided. He was a member of the Massachusetts Medical Society and of the American Medical Association.

George J. Bernays, M. D., of St. Louis, died on Monday, the 17th inst., at the age of sixty-four. He was graduated from the University of Würzburg in 1859, and his professional life in this country has been spent in St. Louis.

Edwin M. Snow, M. D., of Providence, R. I., died on Saturday, the 22d inst. He was born in Pomfret, Vt., in May, 1820, and was graduated from the College of Physicians and Surgeons of New York in 1849. After residing in Holyoke, Mass., for one year, he settled in Providence in 1850. His attention was given early in his professional life to sanitary matters, and he founded and was the first superintendent of the Health Department of Providence, and he soon became a recognized authority in sanitary science. He was a member of the American Medical Association and of the American Public Health Association, of which he was twice elected president.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

Meeting of November 27, 1888.

Dr. O. B. DOUGLAS in the Chair.

A Case of Primary Tuberculosis of the Buccal Cavity.—

Dr. J. W. GLEITSMANN showed a patient who had been cured of

this rare and dangerous disease, and read the following comments on the case and its remarkably successful treatment: All writers who had described the affection had spoken of it as fatal. He had been able to find records of only three recoveries from it where it had been primary, and one where secondary. That the case which he presented had been one of primary tuberculosis there was no doubt; the lungs and the lymphatic glands were still unaffected. The patient had come to him fourteen months previously, having been well up to within two weeks prior to her consulting him. At that time she had had slight pains on swallowing food, and fluids in particular. Her family history and general history were good. He had found on his first examination an ulcer as large as a pea on the base of the tongue, and to the left. On the second visit he had applied to the ulcer lactic acid, a remedy which he had been the first in this country to use, and to the use of which he mainly attributed the patient's recovery. A scraping away of diseased tissues, the rubbing in of lactic acid, and, at a certain stage, the galvano-cautery, had been the only measures which he had made use of. He had purposely kept aloof from medication, wishing to see the general and local phenomena in an unaltered state. The ulcer at the base of the tongue had proved to be only the beginning of the process with which he had had to struggle. A tuberculous ulceration had next appeared along the aryæno-epiglottidean ligament. He had attacked it, as before, with the blunt spoon and lactic acid. Repeated microscopic examinations of the matter removed invariably showed tubercle bacilli present in large numbers. In the early part of last July the primary ulceration on the base of the tongue had healed, but the ulceration in the epiglottidean folds had grown and was making great havoc. A little later there was pain in the left tonsil, and, on examination, a deep flabby ulceration was found in and about the tonsil, which also he had scraped out and cauterized with the galvano-cautery. Later on the lingual surface of the epiglottis had become affected. For a month it remained in an oedematous thickened condition; then, scarifying having failed to relieve this tuberculous infiltration, the whole lingual surface of the epiglottis had sloughed away, and with this the process had stopped at that point. On October 1st the free edge of the soft palate had ulcerated, but healed after being cauterized. Next the ulceration had reappeared in the aryæno-epiglottidean folds, the tonsils were ulcerating as rapidly as before, and the uvula was now badly involved. The condition of the patient indeed became very serious, swallowing gave her great pain, and he had almost despaired of saving her life. On October 20th, feeling that the last measures were now justified, he had scraped away the tonsils and scooped out the other infected areas with a sharp spoon, in spite of brisk hæmorrhage, and had rubbed in lactic acid most energetically. When the slough caused by the acid came away a few days afterward, he had been agreeably surprised to find a smooth and healthy granulating surface beneath, and the tuberculous process come entirely to an end. The pain on swallowing had ceased immediately after the last operation. The denuded surfaces had healed over with smooth cicatricial tissue, without sinuses, and with but a few irregularities or pockets. He ascribed the result mainly to the effect of the lactic acid. No medicines had been used internally. The patient was now in robust health and entirely free of any indications of tubercular deposits elsewhere. Her throat was inspected with the laryngoscopic mirror by most of the members present.

The CHAIRMAN then related the history of a case where, after a very deep syphilitic ulceration of the roof of the mouth, the palate had become adherent to the posterior wall of the pharynx, nearly occluding the latter. He had cut through the palate to re-establish the opening, and had applied monochloroacetic acid

with the effect of keeping the pharynx open, and of causing the ulcer, which had finally perforated the roof of the mouth into the nose, to heal and contract so as to close the false passage.

Dr. J. M. W. KITCHEN, discussing local germicides, recommended highly the hyposulphite-of-sodium solution, and referred to three cases where he had applied it in the beginning stage of what was either diphtheria or follicular amygdalitis. Four persons had been exposed to infection in the same house at the same time. Three of them whom he attended and treated with application of the hyposulphite recovered immediately. The fourth, under the usual methods of treatment, had a sickness of two weeks.

Improved Instruments for Deflection of the Nasal Septum.—Dr. GEORGE HOPE showed two forceps designed for correcting this deformity, one of which had between the flat faces of its jaws a small pin received into a socket at its free end. By punching out the outline of the displaced bone at short intervals it was more easily restored to its normal place by the other forceps. The latter had smooth flat jaws which were set so as to grip firmly any body, however thin, which came between them when closed. He had found it much more efficient than the Adams forceps on this account.

Improved Tongue Depressor for Children.—Dr. J. M. BLAIR exhibited a tongue depressor consisting of a flat, slightly convex blade, the free end of which was narrowed and curved quite over on itself, forming a blunt hook by which the epiglottis could be pulled forward on to the base of the tongue at the same time that the tongue was depressed. Thus a full view of the pharynx and larynx could be obtained in children who could not control themselves so as to make examination by the usual methods at all satisfactory.

Pharyngeal Mycosis.—Dr. A. O. VANDER POEL read a paper with this title. (It will be published hereafter.)

Dr. D. B. DELAVAN remarked that the affection was not uncommon. He had seen a case that same day. He had also observed the liability to attacks of acute follicular amygdalitis being set up from time to time, in which the presence of the parasite could often be shown. Consequently many cases of acute follicular amygdalitis were treated wrongly, the frequency of pharyngeal mycosis not being generally appreciated.

Dr. KITCHEN suggested the hyposulphite of sodium as a means of treatment, especially if allowed time to soak in well, and therefore applied repeatedly with a swab.

Peroxide of hydrogen and other agents were recommended in diphtheria by other members.

Dr. WHITE asked for information from any member as to whether the various sorts of dust, such as librarians and many factory employees constantly inhaled, were a prominent cause of laryngeal and other inflammations in the respiratory tract.

Dr. KITCHEN replied that he was himself exceedingly liable to bronchitis, having had several hundred attacks of it. He knew that the inhalation of dust had produced a large number of them. So certain was it to do so that he always carried a lady's veil in his pocket, and, whenever he saw a cloud of dust coming along the street, placed the veil over his mouth and nose till he reached pure air again. Dusts acted both as mechanical irritants and as physiologically noxious agents. The pollen of certain plants caused an irritation producing hyperæmia of the mucous membranes in some way not fully understood.

Dr. C. S. ALLEN replied to Dr. Kitchen's question that in his hospital service it was common to find a large proportion of those whose work in factories exposed them to dust from polishing-wheels, or to the dust of tobacco, suffering from nasopharyngeal affections.

Dr. J. P. TUTHILL asked for opinions as to what contra-indications to the use of cocaine as an anæsthetic spray, if any, had

been found; and, secondly, what treatment was best when the use of cocaine was found to have brought on dyspnoea, faintness, and staggering, as sometimes happened? In two cases he had caused convulsions by the use of a cocaine spray. Was there any means of knowing such patients beforehand?

The CHAIRMAN replied that no means was known of determining those constitutions thus morbidly sensitive to the toxic action of cocaine short of actual trial. As antidotes he used digitalis, ammonia, and whisky.

The Use of Cocaine in Laryngology and Rhinology was discussed at length by Dr. Huntington Richards, Dr. Delavan, Dr. Gleitsmann, and others. It was agreed that some patients were made faint by the least touch of mild solutions on the mucous membrane. It was urged that mild solutions had quite as lasting an effect as the stronger ones, though the effect was slower in appearing; also that care should be taken not to allow the solution to trickle into the larynx, and to clean the surface of the remains of each application before applying another. No lasting relief to irritable inflammations was to be had from cocaine, as there was a reaction from its primary effect which went quite as far in the other direction. As a general stimulant, it was always followed by a severe vital depression. The danger of forming a cocaine habit existed, according to Dr. Tuthill, only for those who had what might be called the habit-forming habit.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirteenth Annual Meeting, held at Washington, September 18, 19, and 20, 1888.

The President, Dr. ROBERT BATTEY, of Roine, Ga., in the Chair.

(Continued from page 699.)

The Ætiology, Pathology, and Treatment of Antelexion of the Uterus.—Dr. T. GAILLARD THOMAS, of New York, read a paper with this title. Three varieties of antelexion, he said, were usually recognized—that of the body, that of the cervix, and that of both combined. An antelexion might also be reducible or irreducible. The term "congenital" as applied to this displacement was incorrect, since it did not exist at birth, but was the result of imperfect development. Bad habits in regard to dress and constipation increased, by direct pressure, the natural anterior bend in the organ. Obstinate constipation was more likely to lead to antelexion of the cervix. Malnutrition was a potent factor. The displacement led to no symptoms until after puberty, when they were seldom absent. Dysmenorrhœa and sterility or a tendency to abortion were the common accompaniments. The diagnosis was easy, except in certain cases where the angle of flexion was so high up in the body of the uterus as to elude the examining finger. Great caution was necessary in giving a prognosis, as treatment was often unsuccessful; but so many were either relieved or entirely cured that gynæcologists should always offer hope. Each case must be studied and treated separately. There was a great tendency to relapse even after years of treatment, as the wall of the uterus became atrophied or the seat of fatty degeneration. In regard to treatment the reader's views were different from those of some specialists. He had had patients come to him who had passed through the hands of several gynæcologists, one of whom had tried internal remedies alone, another local applications and vaginal douches, a third electricity, a fourth pessaries. All of these were wrong, since they did not proceed in a rational manner. The author first decided whether the case was a suitable one for treatment, then whether palliative or operative treatment was preferable, and finally whether the patient was willing to take the risks. There was a risk attending every gynæcological operation, no matter how trivial, and this should be

frankly stated to the patient and her family. He would not be understood as undervaluing pessaries, but would only deprecate the rash use of them. He employed several, but had been most satisfied with Cutter's, used as an anteversion pessary. If the latter did not give relief he used a glass stem and cup. The patient was put on generous diet and the syrup of hypophosphites, and galvanism was applied to the uterus twice a week. After several months of this treatment the stem was removed and the result noted. If the flexion was irreducible he dilated the canal with an Ellinger-Goodell instrument, and introduced a stem under strict antiseptic precautions. A carbolized douche was given every eight hours. If the temperature rose to 102° F. the stem was removed and more frequent douches were given; if it rose to 104°, the uterus was washed out. The author had never had a death, although he had had two cases of pelvic abscess. In cases of true cervical flexion, due to arrest of development, it was necessary to perform posterior section, an operation that had been abused, but should not therefore be abandoned. In a restricted class of cases the only resort was to amputate the cervix and keep a stem in for three or four months.

The author was unable to state in what percentage of cases of anteversion sterility was cured by the operation. His impression was that conception had frequently occurred after the use of ordinary pessaries, but rarely after the introduction of a stem, and only once after amputation of the cervix. In conclusion, he believed that, while treatment often failed to cure, or even to palliate, it not infrequently relieved the symptoms. When he failed, he felt that it had been in spite of his best efforts.

Dr. GRAILY HEWITT, of London, remarked that anteversion developed very gradually. He accepted Dr. Thomas's classification. The degree of flexion was important; it depended largely on the degree of softness in the uterine tissue. After the flexion had occurred the tissue might harden again. Sterility was present in many cases where the flexion caused no marked symptoms; it was also a common cause of abortion. He had cured sterility in one instance by making a reef in the posterior vaginal wall, thus drawing the cervix backward. General treatment was very important.

Dr. PRIESTLEY, of London, alluded to the great change of opinion that had taken place in Great Britain with regard to the significance of uterine displacements since the time of Churchill. Sufficiently trustworthy statistics with regard to the frequency of anteversion and the results of treatment were wanting. Through Dr. Hewitt's influence a school had sprung up which seemed to attribute even hysteria in young girls to this condition. Its significance was certainly much greater in the case of married women, where the element of sterility was to be considered. Many cases did not require treatment. There was always some risk in intra-uterine manipulations, and a perfectly safe method of treatment was greatly needed.

Dr. ELY VAN DE WARKER, of Syracuse, said that he had ten years before advocated the treatment of which Dr. Thomas did not then approve, but had since adopted. He had used stem-pessaries for twenty years, and had never seen any trouble result, even before the introduction of antiseptics. He had never seen a case of anteversion unaccompanied by symptoms, though these might vary in different patients. A patient might have no symptoms until after marriage; then she became, in consequence of the flexion, weak, nervous, and hysterical.

Dr. H. P. C. WILSON, of Baltimore, believed that constipation was the most common cause of anteversion in young women, and it developed quite gradually. He agreed in general with the author in regard to treatment, although he had never seen any benefit result from the use of pessaries, since these only in-

creased the flexion so far from curing it. He still performed Sims's original operation of posterior section, and then inserted into the cervix a plug of iron-cotton, which was allowed to remain for three days. After cicatrization had occurred the canal was kept open by means of a dilator. So far as he could remember, at least seventy-five per cent. of the patients thus treated had conceived. In one case a woman had borne a child after being sterile for fifteen years.

Dr. B. McE. EMMET said that anteversion as such seldom gave rise to symptoms, these being more often due to former pelvic inflammation. The pain was often due to the sinking of the uterus below its normal plane, and this could be relieved by elevating the organ with an ordinary retroversion pessary.

Dr. GOODELL remarked that he did not recognize any symptoms referable to anteversion *per se* except dysmenorrhœa and sterility. Hysteria and other neuroses might of course accompany it. Rest and tonic treatment were best in the case of young girls. To cure the symptoms mentioned he dilated the os, but rarely used a stem afterward. He had operated over three hundred times without any serious results. He had long since ceased to practice posterior section. Dilatation did not cure the anteversion, but it enlarged the canal and cured dysmenorrhœa and sterility. Anteversion pessaries were of little use, as they pressed on the bladder.

Dr. WYLIE said that he had largely discarded pessaries. He believed that the symptoms in cases of anteversion were due to the accompanying endometritis, and that the appropriate treatment was to dilate and drain the canal; hence the stem did not straighten the uterus so much as it exerted a stimulating action on the diseased endometrium. It was a dangerous instrument, and if a patient was allowed to go about wearing it she was liable to an attack of pelvic peritonitis. He had operated in a case of salpingitis in which the tubal disease was traceable to the use of a stem-pessary. A well-marked flexion might exist without symptoms, but if the endometrium at the os internum was hyperæsthetic (as shown on passing a sound), reflex symptoms would be noted. Posterior section was applicable to cases of sharp cervical flexion, but the old anterior incision should be discarded, as it was highly dangerous.

Dr. THOMAS closed the discussion with a few remarks.

The Results of High Amputation of the Cervix Uteri for Cancer, based upon Observations in Fifty-five Selected Cases.—Dr. REAMY read a paper with this title. No case was reported that had not been under observation for two or more years.

The cases reported had been selected from over three hundred that had been under the reader's care. The results of the medical treatment of cancer had been negative, but in a certain percentage of the cases life might, he thought, be saved by a surgical operation, provided it was performed at the very earliest stage of the disease. The consideration of cases of advanced malignant disease of the cervix, or cancer of the corpus uteri, was excluded from the present discussion, as they were of no use in deciding upon the curability or non-curability of cancer. In nearly all instances the patients had been operated upon in private, as hospital cases were usually already far advanced when first seen. The diagnosis in nearly every instance had been confirmed by a competent pathologist. The author's technique was the same as that described by Dr. Baker in a paper published in the "American Journal of Obstetrics" for April, 1882. He aimed at removing all the diseased tissue, making a wedge-shaped incision in the cervix. Sometimes it was safer not to amputate the supra-vaginal portion. As a rule, the disease began at the os externum and invaded the vaginal wall before extending to the deeper cervical tissue; hence it was more important to cut wide than deep. When the disease had extended higher the

reader made his preliminary incision as for vaginal hysterectomy. In many cases in which a cure resulted after total extirpation of the uterus a less radical operation would have been equally efficacious, where the cervix alone was involved. When the body of the uterus was involved, or the disease had extended to the posterior vaginal wall, extirpation was the only resource. If the supravaginal portion was not involved, why not be content with amputation of the infravaginal portion alone? Not only was the disease thoroughly removed, but flaps of healthy tissue were found which could be united with sutures, so that the stump presented a better appearance after the lapse of a year. The author had found that he was apt to remove the surrounding diseased tissue more thoroughly when performing high amputation than when doing vaginal hysterectomy. Careful observers had noted that in 75 or 80 per cent. of all cases the parametric tissues were involved, and the patient died before the body of the uterus was involved. Of the fifty-five patients operated upon by the author, twenty-eight had had no recurrence of the disease, one case having been under observation for fifteen years, while the shortest period that had elapsed since the operation was one year.

Dr. BAKER said that all his success in the treatment of these cases was due to the teaching of Dr. Sims. The latter had been accustomed to excise the cervix with scissors and then to apply the cautery. The speaker had at first contented himself with simply excising a cone-shaped mass from the cervix, but he had soon found that he did not thus remove all the disease. He then began his incision higher up, and removed a cone as before, including nearly one third of the body of the uterus. The edges of the vagina were then united to those of the uterine wound with silver sutures. Subsequently he allowed the wound to remain open after applying the cautery freely. He had published his cases up to 1886, at which time, out of ten patients operated on, six were free from recurrence from three to four years after operation, and one after eight years. Five patients were now alive and well. At least 50 per cent. of the patients were well at the end of four years. It was necessary to keep a patient under observation for more than two years in order to decide as to the permanence of the cure. This method of treatment was better than total extirpation; in fact, the speaker would limit the operation for extirpation of the uterus to cases in which the body of the uterus was primarily affected, or where the disease tended to extend upward rather than laterally. Even if the vaginal vault was extensively involved by means of the curette and caustics it might be entirely removed.

Dr. JOHN BYRNE, of Brooklyn, said that for nineteen years he had used only the galvano-cautery in amputating the cancerous cervix. He had operated several hundred times, and in a considerable proportion of the cases the disease had not returned. Many patients were still alive at the end of periods varying from five to ten years, and several had since borne children. He had never had an accident from the operation; there was no difficulty in the use of the cautery. The cervix was drawn down, a circular incision was made around it, and the wire was applied; the cervix would be removed at the level of the os internum. If necessary, the scalpel or scissors could be used. The speaker could affirm that in every instance in which the disease returned it was not at the site of the operation.

Dr. VAN DE WARKER said that after a thorough operation with a cutting instrument, with subsequent suture of the parts, when the disease returned it was impossible to remove much more of the uterus in the same way. For ten years he had relied on the chemical cautery, scraping away the cancerous tissue, and packing the cavity with tampons saturated with a solution of chloride of zinc. He cited a case in which a woman had had seven recurrences, yet after every treatment she im-

proved and was able to return to her work. In this way she had been kept alive for several years.

Dr. REAMY, in closing, said in all his cases of high amputation he left the wound open and applied caustics in case of a recurrence. The great advantage of the primary cutting operation was that more of the diseased tissue could be removed. The point which he wished particularly to emphasize was that cancer of the neck of the uterus did not extend to the body as often as was usually supposed. Most of his patients were seen by him at an early stage in the disease, when it was called "laceration" or "ulceration." The reason why the treatment of cancer was so unsuccessful was that the patients were seen too late. The results of treatment in proper cases were most encouraging. It was surprising how little recognition the work of American gynecologists in this field had received in Great Britain. Even the admirable Harveian lectures of Williams contained no reference to American statistics, notably those of Baker.

The PRESIDENT, Dr. Robert Battey, of Rome, Ga., then made a short address, in which he alluded to the change of the place of meeting from Boston to Washington in order to make the time coincide with that of the congress. Allusion was made to the number of vacancies in the list of members and the desirability of increasing the membership. A review of the records of the society since its foundation showed that the attendance at the annual meetings had varied from nineteen to forty-four, the average being twenty-nine. The attendance had been much greater when the meetings were held in the Eastern cities. Two fellows had been present at every meeting; one had contributed nine papers; two had written eight; two, seven; eight, five; and eight, four papers. But it was time for the older men to rest. New blood was needed. Without lowering the standard, the membership might be increased to one hundred, and eligible men in different parts of the country should be invited to apply. The president then referred to the subject of prior right in medical discoveries or operations. There should be a statute of limitation in medicine. If a physician concealed his discovery for years, until another not only made the same discovery but gave the profession the benefit of his observations, the former need not complain if he did not receive the credit of it. Personal modesty under such circumstances was wrong. The *ipse dixit* of an operator after he had allowed years to elapse before he set up his claim to priority was not enough to establish his claim before the world. Discoverers should promptly place their claims on record when the details were still fresh in their minds.

The Pressure-forceps versus the Ligature in Vaginal Hysterectomy.—Dr. E. C. DUDLEY, of Chicago, read a paper with this title. Reviewing the statistics of vaginal hysterectomy, the reader had found that the mortality from the operation was only 15 per cent. Leopold had lost but 6.2 per cent. of his patients, and Klotz none. The objections to the use of the ligature were the difficulty of applying it, whereby the operation was considerably prolonged, and the fact that it was unreliable. Péan, Richelot, and others had recommended the forceps. The technique was briefly as follows: The patient having been placed in the lithotomy posture, a Simon's speculum was introduced and the cervix was drawn down as far as possible. A circular incision was made around the cervix and the tissues were dissected up close to the uterus until the lower borders of the broad ligaments were reached. Douglas's pouch was opened, and two or three soft sponges, with strings attached, were introduced into the opening to absorb the blood and prevent the intestines from prolapsing. The index-finger of the left hand, or a blunt hook, was then passed over each broad ligament in turn, which was drawn down and grasped with a long-bladed hæmostatic forceps. After locking the for-

ceps, the broad ligaments were divided close to the uterus, and the organ was detached and removed. If the broad ligaments were diseased, other forceps could be applied outside the first ones, and the diseased portions could then be excised. Small vessels could subsequently be caught by other forceps. The time of operation was thus greatly shortened. It was even possible to coaptate the edges of the wound with forceps. These not only promoted drainage, but also caused sloughing of the tissues and destruction of any of the diseased parts that had not been removed. They were left in position from forty-eight to seventy-two hours, the vagina being packed with iodoform gauze. The author had collected twenty cases in which the forceps were used, with two deaths. A further application of this method had been suggested by Dr. Mary Dixon Jones in supravaginal amputation of the uterus for fibroid tumors. The author intended in the next suitable case of this kind to first secure the broad ligaments, and then remove the entire uterus; in this way all the advantages of the intraperitoneal method would be secured and the mortality would be reduced. A letter from Péan to the author was read in which the latter defended his claims to this special use of the hæmostatic forceps against those of Richelot.

Dr. HUNTER said that he had used the forceps in four cases of vaginal extirpation, with three recoveries. He had found that the operation was considerably shortened, and that there was less danger of hæmorrhage than when the ligature was used. He thought the forceps shown by the reader too weak; he preferred Polk's modification of Richelot's. He had never been able to include the entire broad ligament in a single forceps; in one instance he had left fourteen *in situ* for forty-eight hours. No vaginal injection was given for three or four days. The operation ought to be completed in half an hour by this method.

Dr. H. T. BYFORD said that he preferred the ligature, and had no fear of hæmorrhage when using it. In eleven operations he had used the hæmostatic forceps four times, not having room to apply ligatures.

Dr. REAMY reported nine cases of vaginal hysterectomy, with one death. He did not see how the broad ligament could be secured with a single forceps, and if several were used there was no room to pull down the uterus. There was really no more shock than in ovariectomy; but it was one thing to have a patient survive the operation and another to know that she was cured of the disease. He thought that the author had underrated the difficulty of drawing down the broad ligaments, as there was often great lack of room.

Dr. LANE, of San Francisco (a guest of the society), said that he had performed the first vaginal hysterectomy in America in 1877 or 1878, having, after careful consideration of the anatomy of the parts, satisfied himself that it was feasible. He had operated fourteen times, with one death, and believed that it was highly important to select cases carefully. If the uterus could not be drawn down readily, the case was not suitable. He had found no difficulty in pulling down the broad ligaments and passing a strong cord around each of them by means of a curved forceps. Three of his patients still survived, and some others had lived for several months after the operation.

Dr. DUDLEY, in closing, said that he had found no difficulty in drawing down the broad ligaments, and had not been inconvenienced for want of room even when sixteen or twenty forceps were applied. He had always operated with the hope of curing the patient.

A Case of Rupture of the Uterus in Labor at Full Term.

—Dr. C. M. GREEN, of Boston, read a paper with this title. The patient, a multipara, was seen by the reader twelve hours after labor had begun. The cervix was deeply lacerated, and the lower segment much thinned. The head had not engaged,

and an examination of the pelvis showed that it was of the rhachitic type, the anterior conjugate being three inches and a half. Version was performed by Professor Reynolds, and in about fifteen minutes a male child, weighing nine pounds, was extracted. The uterus contracted well, but the placenta was not expelled, and on examination it was found that it had escaped through a rent in the lower segment, and lay among the intestines; it was removed through the rent. The patient suffered from profound shock, and laparotomy did not seem to be advisable, since the uterus was well contracted. Her temperature rose to 103° F., the pulse being 130, and the abdomen became tympanitic. Her condition subsequently improved, and she made an uninterrupted recovery, being perfectly well at the end of a month. It was impossible to state just where the rupture occurred. It was probably due to the prolonged pressure of the head, which was in an occipito-posterior position, rather than to the version. In these cases, if the patient did not die within a few hours, she would probably do well. The indications for laparotomy were the presence of continuous hæmorrhage, and the entire escape of the child into the abdominal cavity. If the rupture involved the body of the uterus, it was better to do Perro's operation. In another similar case the reader would resort to high forceps delivery or craniotomy rather than version. He attended the same patient in labor two years after the accident described, and delivered her of an eight-pound child, the position of the head being occipito-posterior. Both the labor and the convalescence were normal.

The Severe Vomiting of Pregnancy.—Dr. GRAILY HEWITT, of London, in a paper with this title, said that the difference between the slight and severe vomiting of pregnancy was only one of degree. Many practitioners seemed to be able to find no resource in these cases except the induction of premature labor. Severe vomiting might be due to several different causes. These might be classed as non-uterine and uterine. Among the reported fatal cases of the former class were disease of the stomach, liver, and intestines. Mathews Duncan had described a fatal case of "icterus gravis" during pregnancy; Lomer had recently written a paper on the same subject. The second class of causes were due to abnormal conditions of the uterus—such as anteversions and retroversions or flexions, induration of the cervix, and endometritis. Retroflexion of the gravid uterus did not always cause severe vomiting. On the other hand, retroflexion of the non-gravid uterus sometimes gave rise to vomiting. Several cases of impaction of the anteфлекed gravid uterus had been reported; this impaction was due to the unyielding character of the uterine tissue. By dilating the cervix in cases of vomiting we overcame the tension in the neighborhood of the os internum. As regarded treatment, most cases were cured by reducing the displacement, or sometimes by simply supporting the uterus. Severe vomiting might be of reflex origin, due to distension of the uterus. Some observers thought that the nerves around the os internum were primarily irritated. There was a close parallel between cases of vomiting in flexions of the gravid and of the non-gravid uterus. [This paper consisted principally of comments upon a series of printed tables prepared by the writer.]

Dr. FORDYCE BARKER, of New York, said that the subject of the paper was one of great interest, and that the profession was already deeply indebted to Dr. Hewitt for former papers on it. The speaker believed that vomiting during pregnancy was largely influenced by the constitution of the patient. Some individuals could not even ride in a railroad car without feeling nauseated, while others were never affected. It was not strange that a constitutional tendency of this nature was apt to be exaggerated during the period of gestation when there was such a total change in the system. He did not believe that anteфлекion of the uterus

was a potent factor in causing vomiting, and cited, in support of this opinion, a case of marked ante flexion in which the patient became pregnant and passed through the entire period without experiencing the least nausea. The flexion was not cured by gestation, but recurred after delivery. In another case there was marked retro flexion with absence of vomiting. However, he had seen cases in which vomiting was associated with flexions. He had seen in consultation no less than ten patients who were *in extremis* from severe vomiting, the question of inducing labor having been entertained too late. He had never been obliged to induce labor for this cause, having succeeded in curing the patients without it. There were many methods of treatment, some of them apparently contradictory. Sometimes it was wisest to give the patient what she craved most, as in a case in which he allowed a lady, who had been able to retain nothing whatever, to eat lobster salad, for which she had a longing. The speaker referred to Copeman's method of dilating the cervix, which he had frequently found of value.

Dr. SKENE agreed with Dr. Barker that the vomiting in these cases was often of neurotic origin. He had also observed that in cases of corporeal endometritis the patient was apt to have more nausea than when the cervical endometrium alone was diseased, and hence had been led to infer that the same pathological condition existing in a pregnant uterus must be a potent factor in causing vomiting. There were many different causes, and each case must be investigated separately.

Dr. WYLIE said that he had frequently dilated the cervix, even as high as the os internum, for vomiting, and nearly always with success. He believed that the neurotic condition of the patient was an important factor. The dilatation must be thorough. At least three fourths of the cases of obstinate vomiting during pregnancy could be cured thus. The speaker always resorted to this method after excluding the ordinary causes of vomiting.

Dr. HEWITT, in closing, said that the word "neurosis" had come to be used rather loosely to explain symptoms which were otherwise obscure. In employing it we probably referred to greater susceptibility of the nerve-centers in a given case, as in the case of weak, anæmic subjects. Such patients were often cured by perfect rest alone. In general, the recognition of the cause of the vomiting was the most important point, because as soon as the diagnosis was made the treatment was clearly indicated.

The Treatment of Chronic Endometritis by Drainage.—

Dr. POLK read a short paper on this subject, in which he presented the results of treatment in seven cases, all the patients being cured. The treatment was applicable to either the hæmorrhagic or the catarrhal form, which were so difficult to cure. In these cases the os externum was often large and gaping, while the os internum was contracted; hence it was necessary, in the first place, to dilate the latter thoroughly, the patient being under an anæsthetic. Then the uterine cavity was irrigated by means of a double catheter, and after being dried was packed with iodoform gauze, which was left *in situ* for twenty-four hours or longer, when it was removed and fresh gauze was introduced. In this way we obtained the advantage not only of thorough drainage, but also of direct medication to the diseased endometrium. This treatment was especially valuable in those cases of endometritis fungosa in which we are accustomed to use the curette.

The Dangers of Galvano-puncture in the Treatment of Pelvic Tumors.—Dr. ELY VAN DE WARKER, of Syracuse, read a paper with this title, in which the following illustrative cases were cited:

CASE I.—The patient had a large mass behind the uterus, which had grown rapidly and was evidently a fibroid tumor.

Bipolar galvano-puncture was tried, according to Freeman's method. The patient, after the first application, developed a high temperature, with local tenderness, and subsequently an abscess formed and discharged. The tumor became visibly smaller. Subsequently bipolar puncture was tried again, without bad results.

CASE II.—The tumor was a large fibroid, filling the pelvis and firmly adherent. Apostoli's method was followed, one hundred and fifty milliamperes being reached. The patient was sent home in a carriage after recovery from the anæsthetic. Two weeks after the operation (during the interval she had been reported as quite ill) there was general softening of the tumor, which was subsequently aspirated, a little bloody fluid, but no pus, being removed.

CASE III.—The pelvis was filled with a hard, irregular mass. Under chloroform, galvano-puncture was employed, with a current of one hundred milliamperes passed for ten minutes. The needle penetrated a soft mass like cheese. The operation was followed by pain in the abdomen and a moderate elevation of temperature. The patient died on the seventh day of peritonitis.

The speaker said that the cases of abscess had all occurred after galvano-puncture, hence he preferred to use the electrolytic action of the current. Galvanism must be employed with great care, as the milliamperemeter did not always furnish a safe guide. He suggested the following points: 1. In no case should a cystic tumor (*i. e.*, a fibrocyst) be punctured, since, if the fluid became purulent, it could not be drained away. 2. The passage of the current might generate ptomaines, which were absorbed and produced general infection. 3. Special precautions should be taken in selecting cases for operation. A fibroid tumor should first be punctured in order to see if it was undergoing cystic degeneration.

The paper was discussed briefly by Dr. ENGELMANN and others.

(To be concluded.)

Reports on the Progress of Medicine.

PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

On the Variation of the Quantity and Activity of Reduction of Oxyhæmoglobin in Typhoid Fever.—In eleven typhoid patients A. Hénocque and George Boudouin ("Jour. des soc. sc.," No. 6, 1888) made one hundred and eighty hæmatoscopic analyses of the oxyhæmoglobin and of the activity of its reduction. The observations were performed at the same time daily. The results are: In typhoid patients a lowering of the quantity of oxyhæmoglobin exists at a rate of 9 to 10 or 11 per cent., which continues for a considerable period during convalescence; anæmia of the first or second degree persists. The variations of the duration of reduction are more marked, especially in the first two or three weeks of the disease; at the period of convalescence the duration of reduction is shorter. In complicated cases the duration is much influenced. The activity of reduction is noticeably diminished in the initial period, particularly when anæmia and diminished nutritive changes are combined. In the period of convalescence the activity, while increasing, remains still lowered, on account of the persisting anæmia. In other words, from the hæmatoscopic point of view, typhoid fever is characterized by a pronounced and persistent anæmia and by the diminished activity of nutritive changes, but the latter improves before the anæmia disappears.

Studies on the Variation of the Respiratory Exchanges with the Pulmonary Ventilation, and under the Influence of Sleep.—Hanriot and Ch. Richet ("Jour. des soc. sc.," No. 2, 1888) followed out in a

series of experiments the continued curve of oxygen absorbed and carbon dioxide exhaled. They found the production of carbon dioxide to be independent of the frequency of the respiratory movements. The excretion of this acid is influenced by the respiratory movements in the beginning only. The quantity of carbon dioxide produced is scarcely dependent upon the sleeping or waking condition of the individual. The authors think the slightly diminished quantity of carbon dioxide during sleep depends upon the muscular resolution being greater during this time. They also found the nutritive exchanges to be lowered in hypnotic sleep.

Colored Vision and the Equivalence of Sensory Excitations.—Ch. Féré ("Jour. des soc. sc.," No. 21, 1888) distinguishes between "photopsie" and "chromopsie" occurring in individuals after their different special senses were stimulated. Photopsie is defined as a luminous impression following a sonorous stimulus and which can occur only in the darkness. Chromopsie, or colored visual sensation, has multiple forms; it may occur as a consequence of sonorous stimulations by a singing voice only, by the voice of ordinary speech, by pronouncing consonants or vowels, and sometimes it may be caused by a special voice or instrumental notes. The visual sensation is independent of the timbre, intensity, or pitch of the sound. Some subjects see only one color, others see many. Pouchet and Fourneux explain the phenomena by supposing nerve-fibers going from the auditory to the visual center, which fibers are usually affected by luminous impressions transmitted by the optic-nerve fibers exclusively. Pedrono devised the view of anastomosis between the cerebral centers. The theory of simultaneous action of the visual and auditory vibrations on both sensory organs was sustained by the fact that blind patients experienced colored visual sensation after the report of a cannon. Baratoux and Urbanschitsch think, after the author's statement, that the sonorous vibrations affect to a slight degree the sense of vision, and the perception of this excitation occurs after the auditory excitation. In Féré's opinion, the excitations must be of identical nature for the occurrence of simultaneous, sonorous, and luminous impressions.

Colored smell (*olfaction colorée*) was observed by Hilbert. In Féré's case of colored taste (*gustation colorée*) the taste of vinegar always excited a visual sensation of a given color; the odor of vinegar never had any special effect.

The colored vision, the author states, may occur spontaneously in some neuropathics without any apparent special excitation. He has shown by different and numerous experiments not only that excitations of the organs of special sense determined subjective sensations, but also that on given subjects it could be demonstrated that these phenomena were accompanied (and this seems to the author to be a necessary physiological condition) by modifications of muscular tonicity, of energy, and of the circulation of the organic functions in general. The facts seem to the author to be of importance in the physiological interpretation of colored vision. The experiments have shown also that a given produced sensation is in intimate relation with some physiological conditions; that the same, or analogous, physiological conditions can be provoked by exciting two different senses. In certain subjects an augmentation of muscular force and volume in the upper limbs determined by visual excitations may be equivalent to that produced by excitation of the auditory or olfactory nerve. The same physiological facts may be produced by mental imagination of the same excitations or by given emotions. The visual sensation of red, for instance, may result from an auditory, olfactory, or gustatory excitation, from a perceptible emotion, such as joy or sorrow, or a violent impulse. If in a given individual the physiological effects of an excitation of the optic, auditory, or olfactory nerves were absolutely equivalent, the corresponding sensations furnished by the different nerves were more or less completely confounded. The author sees an extreme analogy between these facts and the "audition," "olfaction," and "gustation colorée." It seems to M. Féré that the equivalence of physiological effects of sensory excitations may be the hypothesis for the explanation of the phenomena of colored vision, as considered in a general way.

Note on the Important Phenomena following a Lateral Section of One Half of the Medulla in the Dog.—Brown-Séquard ("Jour. des soc. sc.," No. 19, 1888) has shown the persistence of the encephalic functions as regards the voluntary movements and general and special senses, while

the cerebral excito-motor zones seemed to have entirely lost their power. The author was enabled recently to demonstrate the reverse, the excito-motor centers preserving their excitability when all functions were abolished and the animal was completely unconscious. The results of the experiments are thus formulated: 1. All activity of the brain—motor, sensitive, and sensory—can be inhibited by irritating the medulla, or, in other words, unconsciousness can be induced by inhibition. 2. The spinal reflexes can be inhibited by bulbar irritation. 3. Unconsciousness accompanied by diminished excitability of the excito-motor zones does not influence this excitability. 4. Regardless of the loss of consciousness, a lateral section of one half of the base of the brain determines inhibition of the so-called motor centers of the opposite side; these centers remain intact on the same side. 5. The section of one lateral half of the base of the brain does not interfere with the manifestation on one side of an artificially provoked epileptic attack by irritating either the dura or the so-called motor centers. M. Dupuy observed a general epileptic attack following an irritation of the excito-motor zone after section of the cerebral peduncle of the same side. 6. As a rule, with some exceptions, movements of the same side are provoked by exciting the parts opposite to the transverse basal section of one half of the brain. 7. The respiratory function, though relatively feeble at the side of the lesion, maintains sufficiently the diaphragmatic and thoracic movements. 8. For a period of twelve years the author has noticed that a mechanical or galvanic stimulation of any part of the brain can inhibit different movements, or contractions, whether these are on the same, opposite, or both sides. 9. The rapid lowering of the temperature following a bulbar lesion is caused by the absence of exchange between the blood and the tissues.

Contribution to the Study of the Vital Knot in Men.—Paul Loye ("Comp. rend. hebd. de la soc. de biol.," No. 25, 1888) has shown that a decapitated dog dies with movements of the head and trunk, and for about two minutes the head executes grimaces and the body is agitated. In decapitated men he observed the head remaining still; the physiognomy guards an expression of tranquillity and impassibility; the trunk remains immobile. In both cases hæmorrhage, asphyxia, and violent irritation of the nervous centers share in the death; but in the dog the predominant causes are anæmia and asphyxia, the outflow of the blood, and the insufficient oxygenation of that which remains in the head. These conditions account for the convulsive agony in the dog. In men the calm death is caused by inhibition, induced by the violent stroke of the knife and the energetic irritation of the nervous system. There is a suspension, an immediate abolition of the reflex and automatic powers of the nervous centers. The abolition of the excitability of these centers accounts for the ineffective peripheral irritations, for the asphyxiated blood remaining without effect, for the absence of agony and convulsions. Men die of inhibition wherever along the cervical spinal cord the stroke of the knife comes. With the same conditions equal, dogs die with convulsions. Dogs die with symptoms of inhibition, as men, only when the section passes through the vital knot. The author states that, if decapitation were not to be used as a synonym of decollation, the following would formulate the facts: Decapitation through the vital knot in the dog equals the decollation at any point in the cervical spinal cord in men.

These facts, the author alleges, seem to modify the notion of the existence of the vital knot as determined by Flourens, for in men a section or lesion at any part of the cervical spinal cord induces a calm death, with prompt suppression of the respiration. The author gives, with Brown-Séquard, the definition of the vital knot as the region in the nervous system which, on being irritated, is the most favorable to generate inhibition of the centers. It is also added that the vital knot, being considered as the seat of the greatest inhibitory power, is limited in the dog, while in men it is of incomparably greater extent. This definition, it is further stated, must not be contradicted by the fact that in decapitated men the inhibition is not always absolute and definite. This fact may be explained by the fact that a certain quantity of blood remains in the decapitated head. The inhibitory effects are characterized often, besides, by promptitude and by short duration. There may occur sometimes suspension, and not suppression, of function. The non-active stage after decapitation may have two causes—permanent or transitory inhibition. In the first case the centers are definitely stupe-

fied, in the second the functions are temporarily suspended. Their vitality may reappear if the conditions necessary for their nutrition are found. The fact of the occurrence of vital function in a man's head after a previous inhibition may be explained by a retained quantity of blood during the violent shock, then function on account of this blood, and final death caused by absence of renewal of the asphyxiated blood.

Paul Loyer (*id.*, No. 27, 1888) states that his work under this heading was criticised by M. Laborde, who announced the author's views as regards the calm death of a decapitated man to be incorrect, spasms of the facial muscles and convulsive grimaces being the rule in this death, the fact being well known from the bloody public scenes since the first and frequent use of the guillotine in 1793. The body, separated from the head, has been seen often to present general convulsive movements.

M. Loyer adduces the following authorities, who have personally observed human decapitations: Wendt, Klein (twice), Rigley, Bonnefaut (twice), Holmgren (five times), Petitgaud, Regnard, and Paul Loyer twice). According to the authors named, in fourteen observations the head was seen to be immobile after separation from the body. Six times there was complete immobility; six times there were, after one or two minutes, very slight movements of the eyes and jaws; twice it was agitated, after the same time, by more marked movements. As regards the body, in all cases (fourteen) it remained immobile. In Petitgaud's observation there were some movements of the facial muscles at the level of section. The author states that, contrary to Laborde's enunciation, the facial muscular spasms and convulsive grimaces are not the rule, and the body separated from the head is not agitated by convulsive movements. The author says that he has collected information from physicians and physiologists exclusively, and in his personal observations with Dr. Regnard he was surprised by the prompt corporeal immobility. As regards the psychological influence in men, M. Laborde relates to the author that he expects to demonstrate in future the insignificant influence of this factor in death following decapitation.

On the Physiology of the Subcortical Ganglia, and the Relation existing between these Ganglia and Epileptic Attacks.—Ziehen (*Jour. des soc. sci.*, No. 35, 1888) has drawn conclusions from his preceding researches that clonic convulsions of an epileptic attack were of cortical origin, and tonic convulsions of subcortical origin. According to Beswanger, the medulla and the spinal cord, on being excited in a reflex manner, give rise to tonic convulsions and movements of displacement. To elucidate the question of the origin of tonic convulsions, Ziehen experimented on rabbits in which the hemispheres had been extirpated so as to expose the corpus striatum, the lenticular nucleus, the optic layer, and the corpora quadrigemina. Faradaic stimulation of these parts gave the following results: The stimulation of the corpus striatum and the lenticular nucleus was followed by movements of mastication, movements of the eyelids, rotation of the head to the side opposite to the excitation, and tonic contractions of the muscles of the legs; the latter contractions followed also upon stimulation of the optic layer. The section of the optic layer was followed by movements of locomotion. The same movements and general tonic contractions followed the excitation and section of the anterior pair of the corpora quadrigemina. Ziehen concludes that motor centers presiding over movements of co-ordination exist probably between the optic layer and the anterior part of the corpora quadrigemina; and that in the above-mentioned experiments these centers were excited in a reflex way; that the intracerebral set of the optic nerves share probably in the production of these reflexes.

Experimental Nephritis.—Gaucher (*Jour. des soc. sci.*, No. 3, 1888) recognizes, besides the usual causes of the large white kidney, an internal toxic cause, which develops insidiously in the organism itself, and enables us to determine the real etiology. The incomplete oxygenation of the nitrogenous substances yields different extractive matters which poison the organism. The same conditions, experimentally established by the author, have shown the toxic action on the kidneys. Gradually increasing doses of aqueous solutions of creatine, leucine or tyrosine, xanthine or hypoxanthine, were introduced subcutaneously in guinea-pigs. The animals presented albuminuria, and died of toxic doses of these substances. The post-mortem revealed the true white

kidney. The accumulation of the extractive matters in the blood irritates the secreting epithelium, and generates parenchymatous nephritis. Parenchymatous affections of the liver, according to the author, which interfere with the nitrogenous metabolism, present favorable conditions for the occurrence of the large white kidney. The unassimilated nitrogenous substances accumulate in the blood, and this explains the frequent occurrence of albuminuria in cirrhosis of the liver. The author produced experimentally the noxious action on the kidneys of these materials in chronic wasting diseases where metabolism is interfered with. An excessive introduction as well as production of extractive materials, the author states, suffice to produce a large white kidney; and if the kidneys were previously irritated, the lesion will necessarily be aggravated. From the therapeutical point of view, it is said, great danger is offered to nephritic patients by any of the meat preparations and broths; for patients with kidney disease, these are poisonous solutions. The same is true, even for healthy persons, of all meat extracts, concentrated broths, and meat powders, which contain, besides potash salts, all the excrementitious materials referred to.

On the Action of Iron on the Normal Organism.—In the "*Revue méd.*," No. 6, 1888, are reported Schuly's experiments on four medical students in perfect health. The experiments were conducted during four weeks, and each experimenter took about fifty centigrammes of perchloride of iron for this period. The following were the symptoms: During the first days there was nothing abnormal; at the end of the first week a heavy sensation in the stomach, intestinal meteorism, and nausea were noted. The intestinal embarrassment disappeared, and was replaced by symptoms of congestion of the face and acceleration of the pulse; some cutaneous eruptions, and a sensation of heat and prickling. At the fourth week the appetite increased, the experimenters felt stronger than usual, the pulse increased gradually all the time, and became hard. During two weeks after the suspension of the experiments the students were enfeebled, had the same gastro-intestinal trouble, the same fits of depression which were observed in the beginning of the administration of the salt. These facts show, according to the author: 1. Iron is an active medicament even in very small doses. 2. Its action is analogous to that of arsenic. 3. Experiments on healthy persons may be of great value.

Experiments Relative to the Influence of Coffee on the Excretion of Urea.—A. Dumont (*"Revue méd."*, No. 6, 1888) investigated the subject by analyzing daily the urine of a person who had a strictly regular diet for ten days. In the first period no coffee entered into the regular regimen; during the last four days an ordinary dose of coffee was given daily. The average amount of urea excreted in the twenty-four hours was 38.16 grammes for the first period and 32.84 grammes for the last. The author concludes that coffee diminishes the metabolic phenomenon. He alleges also that the fact has been announced already by others, but no statements have before been based upon strictly scientific calculations.

Researches on the Physiology of the Cerebellum.—E. Dupuy (*"Revue des sc. méd."*, No. 63, 1888) reports that Flourens has shown lesion of the cerebellum to be followed by special trouble of locomotion. Dupuy alleges that a complete ablation of the cerebellum, cutting entirely the peduncles at the same level, and all at the same time, does not cause any trouble of locomotion. The experiments were made on dogs.

Remark on the Respiratory Centers.—M. E. Wertheimer (*"Comp. rend. hebdom. de la soc. de biol."*, No. 27, 1888) does not agree with M. Laborde's statements that an ablation of the vital knot leads to a decided abolition of the respiratory movements. The author has seen sub-bulbar sections of the spinal cord at a level with the axis followed by respiratory movements, the latter occurring even two or three hours after the operation if the respiration was artificially maintained. With Brown-Séquard the author admits the loss of respiration to be due to inhibition. Being guided by the fact that in cold-blooded animals the medullary reflexes reappear more readily than in warm-blooded animals after the section of the spinal cord, the animals operated on were cooled previous to the operation to suppress the traumatic shock. The results were positive. The respiration reappeared a few minutes after the operation.

Determination of the Electro-motor Action of the Heart in Men (Presented by Brown-Séquard).—Augustus D. Waller (*"Jour. des soc.*

sc.," No. 23, 1888) gives the results only of his work. The electric variation preceding and accompanying the ventricular systole can be determined in men and in animals by means of Lipmann's capillary electrometer, deriving from different parts of the body at a distance from the heart (extremities, mouth, eyes, etc.). This variation has two phases: 1. In the beginning of the ventricular contraction a negativity of the point is caused; in other words, an excitatory change beginning in this part of the heart. 2. In the second phase, toward the end of the ventricular contraction, a negativity of the base is caused, or an excitatory change ending in this part of the heart.

On the Retardation of Retinal Impressions.—Bloch ("Comp. rend. de la soc. de biol.," 1888) contests Carpenter's theory on the interval between succeeding luminous impressions. Carpenter's experiments consist in finding out the interval of the visual perception between a first and a second excitation, then between a second and third. The last interval is of less duration. Bloch explains the fact by the augmentation of the intensity of the luminous sensation after the second excitation. Since the persistence varies in inverse ratio to the intensity of sensation, it is obvious that under this sole influence the persistence appears shorter between the second and third excitations than between the first and second.

Experimental Studies on Sea-vertigo.—Pampoukis ("Jour. des soc. sc.," No. 36, 1888) concludes his work as follows: 1. Most animals are susceptible to sea-vertigo, but they vomit very rarely. 2. Dogs suffer enormously, showing dilatation of the pupils, loss of equilibrium, anorexia, and muscular tremors. 3. The respiration is more frequent, but shallow in the beginning of the balancing; after a short time the contrary occurs. 4. Rabbits present approximately the same symptoms as dogs. 5. The comparison of the results obtained with sea-vertigo in men shows that this malady is the result of the brisk movements of the vessel, and especially when the latter sinks into the waves. 6. Idiosyncrasy influences the manifestation decidedly. 7. The most radical means of avoiding this malady is to ask the navigation companies to suspend the beds after the marine-lamp system.

Experimental Researches on the Comparative Rapidity of Absorption, by the Subcutaneous Connective Tissue, of Some Anodynes.—H. Chouppe ("Comp. rend. hebdom. de la soc. de biol.," No. 26, 1888) considers it important to notice the place of injection, the substance used, and the corresponding rapidity of absorption of the drug; these conditions, says the author, must guide the physician in administering second doses of anodynes in cases where the previous injections are of latent action. From experiments on dogs and guinea-pigs the following results are given: The action of the minimum vomiting dose of apomorphine is determined in dogs after between four and five minutes; the effects appear after one minute if the same dose is given intravenously. In guinea-pigs convulsions are determined by cocaine in from ten to twelve minutes. The minimum fatal dose of strychnine causes convulsions in dogs after twenty minutes. In guinea-pigs the action is seen after twenty to twenty-five minutes. The author announced that different anodynes, equal quantities of which are injected, do not reach the general circulation with the same rapidity. As is known clinically, the effects of morphine are seen within six or seven minutes, while those of apomorphine appear within from four to five minutes.

On the Vascular Reflexes in Fever.—Thibierge ("Revue des sc. méd.," No. 63, 1888) reports the following: From 66 experiments on normal persons it was found that cutaneous excitations did not always bring about vascular reflexes. In the positive case the reflex is characterized by constriction of the vessels, and sometimes by dilatation; the interval between the stimulus applied and the occurrence of the reflex phenomena varies with the individuals. The reflex reaches its maximum intensity at the end of variable times between two and fourteen seconds, according to the individual; the period of its persistence varies between ten, twelve, and forty-five seconds. The vascular reaction is not always proportional to the intensity or duration of the excitation; it is more active after meals. In febrile patients the reflexes are expressed either by vascular constriction or, rarely, by dilatation. The principal reaction is sometimes preceded for a short interval by an accessory reaction of opposite character. In the same individuals the reactions are not the same during the febrile and apyretic periods. During the first the vascular reactions are usually more energetic,

quicker, and last for a longer time than in the apyretic period; but sometimes the reverse is observed.

The Influence of the Nervous System on Absorption.—B. Baculo ("Revue des sc. méd.," No. 63, 1888) reports that absorption is not a pure physical phenomenon, but is dependent upon a vital activity and nervous influence. The author's conclusions are: 1. The stomach absorbs more rapidly after section of the vagi, and the same is true of the lungs. 2. Section or hemisection of the spinal cord, or section of nerves, does not interfere with the more rapid absorption in the paralyzed regions. 3. Section of the splanchnic nerves on both sides accelerates the intestinal absorption.

Experimental Researches on the Mechanism of the Respiratory Movements.—Unverricht ("Jour. des soc. sci.," No. 18, 1888) has studied by the graphic method the modifications of the respiratory movements subsequent upon excitations of the cerebral gray substance. The animals were anesthetized by morphine, to avoid the excitability of the cerebral cortex. Faradaic stimulation of the cortex caused diminished respiratory movements, and the intervals between them were decidedly longer than the usual. The author tried to demonstrate that neither were branches of the trigeminus irritated nor did any reflex action intervene—that it was due to a cortical inhibitory center of respiration.

The Modification of the Temperature in Connection with Muscular Work.—Laborde ("Revue des sc. méd.," No. 63, 1888) reports the conclusions that even after the death of an animal an application of a strong electric current to a muscle augments its temperature. The latter is the result of simple muscular contraction, for neither the nervous system nor the circulation takes part in it.

The Exhaustive Stage following an Epileptic Attack.—M. Féré ("Jour. des soc. sci.," No. 35, 1888) has observed epileptic attacks to be followed by muscular feebleness, which reached sometimes hemiplegia or paraplegia. This was especially true of the muscles that suffered contractions. The muscles of the tongue, eyes, and respiration are also enfeebled; the expiration is prolonged and abrupt. The motor trouble is often associated with that of general and special sensibility. This nervous exhaustion influences the action of pilocarpine in diminishing its action on perspiration, but the action of pilocarpine is not modified in cases of absence of this nervous exhaustion. In such cases, the author states, it is erroneous to think that this agent can guide in making a diagnosis of epilepsy. Contrary to the general opinion, M. Féré has found the pilocarpine to augment the arterial tension.

On the Effects of Faradization of the Right Pneumogastric on the Urinary Secretion.—Arthaud and Butte ("Jour. des soc. scientifiques," No. 3, 1888) have compared the quantity of urine excreted from the right ureter in the normal animal and the excretion during the experimental manipulation by introducing a long capillary tube into the ureter and noticing the velocity of the liquid for a unit of time. In the normal stage the velocity was from four to four and a half centimetres a minute. During stimulation of the vagus by a slight faradaic current the secretion diminished. The latter was in inverse ratio to the intensity of the current. After section of the vagus, a feeble current gave a normal secretion; with the increase of the intensity of the current the same ratio existed as before, and the secretion ceased with the maximum intensity. The secretion occurred normally after the cessation of the stimulus.

The examination after the stimulation revealed an artificial nephritis of the right kidney. The modification of the urinary secretion was accompanied by decided albuminuria. The authors conclude that the right vagus influences by its peripheral branches the urinary secretion, though Cl. Bernard and Vulpian observed opposite results. The conditions of the experiments were not exactly the same in the authors' cases. Arthaud and Butte expect to verify the results experimentally.

The Centripetal Way of the Reflex of Sneezing (Presented by M. R. Blanchard).—E. Wertheim and H. Surmont ("Jour. des soc. sci.," No. 5, 1888) reach the following conclusions: 1. Excitation of the olfactory lobes does not provoke sneezing, nor any movements. 2. The ethmoidal ramus of the nasal nerve of the ophthalmic branch, when parting from the nasal fauces, represents habitually the only centripetal way of the reflex of sneezing. 3. Sneezing of ocular origin has its point of departure in the ciliary nerves.

The Significance of the Corpora Quadrigemina.—E. Retterer ("Revue des sc. méd.," No. 63, 1888) reports Betcherew's experiments on birds and *Mammifera*, performed with the object of determining the center of innate movements of expression, or affective movements (psycho-reflex of some authors). 1. After ablation of the cerebral hemispheres, there were provoked, by peripheral excitations, movements of locomotion, or an act of very complex movements, which express in animals sentiments of sensation. The author calls them movements of reflex expression, to distinguish them from simple reflex movements. 2. After the abolition of the corpora quadrigemina the animals were rendered completely blind, but they could groan and cry after violent peripheral excitations. After this mutilation the animals were still capable of performing various movements of the anterior and posterior extremities. 3. The passage of an electric current through the corpora quadrigemina provokes in animals possessing, as well as deprived of, their hemispheres, a very prolonged manifestation of the voice, accompanied by prolonged expiratory movements, and also by contractions of the muscles of the face, trunk, and extremities. The different movements remind one of those of expression in higher animals. 4. Animals with the quadrigemina destroyed and the hemispheres intact are capable of performing all kinds of voluntary movements, but are not able to manifest their sensations and sentiments by movements of expression, though it is possible to provoke some movements of expression in animals by destroying their hemispheres and using an extremely painful excitation. Feeble excitations remain without any effect. The corpora quadrigemina seem then to be a motor center of expression in response to involuntary and psychic impulses and to excitations of the organs of special senses. 5. Clinical observations on man seem to corroborate the conclusions: anencephalic subjects are able to cry, to open their eyes, and to make suction movements during the few hours of their life. Patients with facial paralysis or deprived of the power of mimetic movements are able to laugh and cry without possessing the power of stopping these acts. Chorea seems to be the anatomical substratum of an affection of the corpora quadrigemina. In fact, in most cases of hemichorea, lesions of the quadrigemina are found, as well as, in some cases, of the fibers passing through the internal capsule. Localized lesions or tumors of the quadrigemina are often accompanied by hemichorea, without well-marked paralysis of voluntary movements. The author was enabled to induce chorea-like movements in animals by producing circumscribed lesions of the quadrigemina.

On the Movement of Rotation determined by a Lesion of the Supra-oesophageal Ganglia in the Snail.—M. Louis's article ("Jour. des sc. sc.," 1888) is concluded as follows: Ablation or lesion of one of the supra-oesophageal ganglia produces in the snail a movement of rotation from the sound to the severed side. In the slug the same lesion causes the body to curve upon the side opposite to the lesion. Immediately after making the lesion the head reaches the legs, and the slug assumes the form of a ring. If it attempts to move in this position, it turns from the severed to the sound side. The author ascribes this difference of direction in the two examples to the fact that the examination was made under different conditions; some were observed immediately after the operation, others about a month after the experiment.

Miscellany.

The Health of San Francisco.—According to the Health Department's "Condensed Statement of Mortality" for November, the whole number of deaths was 562, including 5 from cerebro-spinal meningitis, 4 from cholera infantum, 29 from croup and diphtheria, 1 from erysipelas, 15 from typhoid fever, 3 from typho-malarial fever, 3 from malarial fever, 4 from whooping-cough, and 1 from septicæmia.

The Health of Connecticut.—According to the State Board of Health's "Monthly Bulletin" for November, the whole number of deaths reported was 850, including 1 from measles, 12 from scarlet

fever, 10 from cerebro-spinal fever, 58 from croup and diphtheria, 4 from whooping-cough, 4 from erysipelas, 29 from typhoid fever, 11 from malarial fever, 8 from typho-malarial fever, and 7 from puerperal fever.

The Health of Kansas City, Mo.—According to the Health Department's "Weekly Return" for the week ending December 10th, there were 23 deaths, including 2 from croup and diphtheria, 2 from pneumonia, and 1 from septicæmia. This corresponds to an annual death-rate of 8.08 in a thousand of the population.

ANSWERS TO CORRESPONDENTS.

No. 247.—Address Dr. William R. Ballou, No. 236 East Thirty-first Street, New York.

No. 248.—See an article on the subject by Rosenbach, in the "Breslauer ärztliche Zeitschrift," vol. viii, 1886, pp. 181 and 193; and one by Strahan, in the "British Medical Journal," 1885, vol. ii, p. 435. The subject is treated of incidentally also by Rockwell, in this Journal for February 18, 1888, p. 180, and by Webber, in the "Boston Medical and Surgical Journal" for May 3, 1888.

To Contributors and Correspondents.—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.

All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.

Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.

Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.

All communications intended for the editor should be addressed to him in care of the publishers.

All communications relating to the business of the journal should be addressed to the publishers.

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